

USSR

UDC 51:155.001.57:631.3.06

ADAVICH, P. N., BORISOV, A. N., GOLENDER, V. Ye.

"Adaptive Algorithm for Recognition of Eroded Classes"

Kibernetika i Diagnostika [Cybernetics and Diagnosis -- Collection of Works],
No 4, Riga, Zinatne Press, 1970, pp 149-156 (Translated from Referativnyy
Zhurnal Kibernetika, No 3, 1971, Abstract No 3 V584 by the authors).

Translation: The problem of recognition of patterns in eroded sets consists in restoring the dividing hypersurface on the basis of learning sequences containing the objects and their membership functions to each pattern. An adaptive algorithm for recognition of eroded patterns is presented, consisting of a modification of the known learning algorithm with correction of errors. Results are presented from a comparative study of the ordinary algorithm and its eroded analogue for a model problem and the problem of distinction of manuscript letters.

1/1

- 37 -

USSR

UDC: 621.396.74

BOMSHTEYN, B. D., ~~BORISOV, A. S.~~, KIRIK, G. A.

"Signal-to-Noise Ratio in Primary Wide-Band Channels Made up of n Transducer Sections"

Sb. nauch. tr. TsNII svyazi (Collected Scientific Works of the Central Scientific Research Institute of Communications), 1971, vyp. 1, pp 16-23 (from RZh-Radiotekhnika, No 3, Mar 72, Abstract No 3A18)

Translation: The authors examine a procedure for determining the numerical characteristics of distribution of the signal-to-noise ratio for communications channels consisting of n transducer sections from the known numerical characteristics of the distribution function of interference in the channel comprised of a single transducer section. Resumé.

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- 36 -

Organometallic Compounds

USSR

UDC 542.957:547.357.2

KESMEYANOV, A. N., BORISOV, A. YE., and NOVIKOVA, N. V., Institute of Hetero-organic Compounds, Academy of Sciences USSR

"Reaction of Some Organometallic Monohydrides With Ethynylferrocene"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 6, Jun 72, pp 1372-1375

Abstract: Continuing their studies in the field of bimetallic derivatives of the ethylene series $R_{n-1}M^I \text{CH}=\text{CH}M^II R_{m-1}$ which contain various combinations of elements (Sn, Ge, Sb, As, Si, Hg) in the molecule, the authors studied the addition of triphenylstannane, triphenylgermane and diphenylstibine to ethynylferrocene and obtained respectively: (1-ferrocenyl-2-triphenylstannyl)ethylene (I), (1-ferrocenyl-2-triphenylgermyl)ethylene and (1-ferrocenyl-2-diphenylstibyl)ethylene. I reacts with corrosive sublimate to form β -ferrocenylvinylmercuric chloride, symmetrization of which with KI gives di-(β -ferrocenylvinyl)mercury, which under the action of corrosive sublimate is readily converted again to β -ferrocenylvinylmercuric chloride. Under the action of bromine I is converted into β -bromovinylferrocene. α -Chlorovinylferrocene reacts with lithiumtriphenylstannane to give (1-ferrocenyl-1-triphenylstannyl)-ethylene.

1/1

1/2 020 UNCLASSIFIED PROCESSING DATE--09OCT70
TITLE--CALCULATION OF THE OPTIMAL TIME OF THERAPEUTIC USE OF RADIOISOTOPE
SOURCE OF RADIATION -U-
AUTHOR-(03)-SULKIN, A.G., KOCHETOVA, G.P., BORISOV, A.YE.

COUNTRY OF INFO--USSR

SOURCE--MEDITSINSKAYA RADIOLOGIYA, 1970, VOL 15, NR 4, PP 63-66

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--RADIOISOTOPE, RADIATION SOURCE, MEDICAL NUCLEAR APPLICATION,
RADIOTHERAPY, COBALT ISOTOPE, MEDICAL EQUIPMENT/(U)ROKUS MEDICAL
EQUIPMENT, (U)LUCH 1 MEDICAL EQUIPMENT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAE--1990/0958

STEP NO--UR/0241/70/015/004/0063/0066

CIRC ACCESSION NO--AP0109115

UNCLASSIFIED

2/2 020

UNCLASSIFIED

PROCESSING DATE--090CT70

CIRC ACCESSION NJ--AP0109115

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ARTICLE IS CONCERNED WITH THE DETERMINATION OF THE OPTIMAL (FROM THE VIEWPOINT OF MINIMAL COST OF IRRADIATION SEANCE) TIME OF USING THE RADIOISOTOPE SOURCE IN GAMMATHERAPEUTIC APPARATUS. THE TECHNIQUE OF THE CALCULATION AND THE MAIN RATIOS AND FORMULAS ARE GIVEN. A TABLE FOR FACILITATING THE PRACTICAL USE OF THE PROPOSED TECHNIQUE IS DESCRIBED. THE SAMPLES OF CALCULATION OF THE OPTIMAL TIME OF USING CO PRIMES0 SOURCES IN TELEGAMMATHERAPEUTIC APPARATUS LUCH-1 AND ROKUS ARE PRESENTED. THE AUTHORS ANALYZE THE DEPENDENCE BETWEEN THE OPTIMAL TIME AND DURATION OF THE IRRADIATION SEANCE, THE TIME FOR AUXILIARY AND PREPARATORY MEASURES, AND THE WORK SHIFTS AND THE THERAPEUTIC ROOM. FACILITY:
VSESOYUZNYY N-1 INSTITUT RADIATIONNOY TEKHNIKI.

1/2 007 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--NQR NUCLEAR QUADRUPOLE RESONANCE SPECTRA OF ANTIMONY 121 AND
ANTIMONY 123 IN R SUB3 SBX SUB2 COMPOUNDS -U-
AUTHOR--(05)-SVERGUN, V.I., BORISOV, A.YE., NOVIKOVA, N.V., BABUSHKINA,
T.A., BRYUKHOVA, YE.V.
COUNTRY OF INFO--USSR
SOURCE--IZV. AKAD. NAUK SSSR, SER. KHIM. 1970, (2), 484-5
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--NUCLEAR RESONANCE, CHLORIDE, ANTIMONY ISOTOPE, BROMINE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1997/1519 STEP NO--UR/0062/70/000/002/0484/0485
CIRC ACCESSION NO--AP0120300
UNCLASSIFIED

2/2 007

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0120300

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE NQR SPECTRA OF PRIME121 SB AND PRIME123 SB WERE REPORTED FOR R SUB3 SBX SUB2 WHERE R WAS SELECTED FROM ME, ISO BU, BU, CL, PH, CIS AND TRANS CLCH:CH, AND X WAS SELECTED FROM CL AND BR. THE MEASUREMENTS WERE TAKEN AT 77DEGREESK. PH SUB3 ASCL SUB2 IS ISMORPHOUS WITH PH SUB3 SBCL SUB2 AS THEIR RESP. NQR DATA ARE READILY TRANSLATABLE. FACILITY: INST. ELEMENTOORG. SOEDIN., MOSCOW, USSR.

UNCLASSIFIED

USSR

BORISOV, A. YU., et al., Priory i Tekhnika Eksperimenta, No 1, Jan-Feb 72, pp 174-176

and of the maximum coefficient of modulation t were studied as function of the divergence angle 2α . The dependence of the relative function $\delta = N/N_{\max}$, where $N = \beta \cdot t \cdot VS$, and S = light flux and β = proportionality factor, on 2α and the focal length of the second lens in the two-lens system are discussed by reference to diagrams showing the advantage of the two-lens system. Two illustrations, three biblio. refs.

2/2

- 178 -

USSR

UDC 543.42:574/578

BORISOV, A. Yu., LARIONOV, V. N., and MOKHOVA, Ye. N., Interfaculty Laboratory of Bio-Organic Chemistry, Moscow State University imeni M. V. Lomonosov

"Differential Spectrophotometers Used in Biology"

Moscow, Biologicheskiye Nauki, No 8, 1970, pp 118-128

Abstract: A brief account is presented of the history and uses of differential spectrophotometers. The three main types (single-beam, two wave, double-beam) are described, and their technical characteristics are outlined (optical, mechanical, and electronic components; modulation frequency; automatic regulation of intensity; preliminary limitation of frequency bands). The principal features of the spectrophotometers designed by Chance, Klingenberg and Blücher, Duysens, Kok, Lundegard, Witt, and the authors of the article are noted. The parameters and characteristics most appropriate for investigations of cellular respiration, photosynthesis, and oxidative and photosynthetic phosphorylation are summarized.

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USSR

UDC 577.45

BORISOV, A. Yu., GODIK, V. I., and CHIBISOV, A. K. Department of Bioenergetics, Laboratory of Bioorganic Chemistry, Moscow State University imeni M. V. Lomonosov, and Institute of Geochemistry and Analytical Chemistry imeni V. I. Vernadskiy, Academy of Sciences USSR, Moscow

"On the Types of Energy Transfer in Bacterial Photosynthesis"

Moscow, Molekulyarnaya Biologiya, Vol 4, No 4, Jul/Aug 70, pp 500-508

Abstract: The formation of triplet states of bacterial chlorophyll induced by flash illumination was studied in Rhodospirillum rubrum chromatophores. At saturating light intensity and in the presence of dithionite triplet states were not observed either under normal conditions or at low temperatures. The quantum yield of triplet states was low, since nonradiating transitions diminished the triplet state lifetime to no more than 6.6×10^{-9} sec (a value well above the sensitivity limit of the method used). On the basis of experimental data three possible types of energy transfer and photoinduced transformations in the reaction centers are considered. For each type, requirements are formulated for the rate of energy conversion at the reaction centers and the bacterial chlorophyll intersystem crossing rate. The results of the analyses show that energy transfer and transformation processes within the reaction centers are likely to take place without the participation of bacterial chlorophyll triplet states.

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1/3 022 UNCLASSIFIED
TITLE--THE LABOR UNION AND PUBLIC HEALTH -U-

PROCESSING DATE--09OCT70

AUTHOR--BORISOV, B.

COUNTRY OF INFO--USSR

B

SOURCE--MOSCOW, MEDITSINSKAYA GAZETA, 23 JAN 70, P 4

DATE PUBLISHED--23JAN70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--PUBLIC HEALTH, MODEL, MACHINE MANUFACTURING PLANT, INDUSTRIAL
HYGIENE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1993/0058

STEP NO--UR/9034/70/000/000/0004/0004

CIRC ACCESSION NO--AN0113045

UNCLASSIFIED

2/3 022

UNCLASSIFIED

PROCESSING DATE--09OCT70

CIRC ACCESSION NO--AN0113045

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A MUSCULAR HAND HOLDING A MASSIVE MARK OF QUALITY. THIS EMBLEM WAS PREPARED BY THE SVERDLOVSK EXHIBITION, "NOT (NAUCHNAYA ORGANIZATSIYA TRUDA; SCIENTIFIC ORGANIZATION OF LABOR) AND TECHNICAL PROGRESS". THE SYMBOLISM IS OBVIOUS. TECHNICAL PROGRESS TODAY IS UNTHINKABLE WITHOUT NOT, WITHOUT THE CREATION OF OPTIMAL SANITARY HYGIENIC WORKING CONDITIONS IN PLANTS AND FACTORIES. HUNDREDS OF PLANE TABLES AND MORE THAN 300 MODELS DESCRIBE WHAT IS BEING DONE TO MAKE THE WORK OF THE PEOPLE OF THE URALS HEALTHY, PRODUCTIVE, AND HAPPY.

HERE IS AN EXHIBIT FROM THE URAL PLANT OF CHEMICAL MACHINE BUILDING. ONE OF THE STANDS TELLS ABOUT THE SOCIAL CONSEQUENCES OF INTRODUCING OVERALL PLANS FOR NOT. OCCUPATIONAL DISEASES CONNECTED WITH INDUSTRIAL NOISE AND WORKING IN A TOXIC ENVIRONMENT HAVE BEEN REDUCED HERE BY TWO TO FIVE TIMES ACCORDINGLY. THIS IS A DIRECT RESULT OF ESTABLISHING OPTIMAL WORKING CONDITIONS. ANOTHER EXHIBIT. THE PLANT IMENI M. KALININ. AS CAN BE SEEN FROM THE DATA CITED, A PHYSIOLOGICALLY BASED CYCLE OF WORK AND REST LOWERED THE WORKERS' FATIGUE AND INCREASED THEIR CAPACITY FOR WORK. MUCH INTEREST IS AROUSED BY THE EXHIBIT FROM A TOOL PLANT, WHOSE MANY YEARS OF FRIENDSHIP WITH MEDICAL SCIENTISTS, HYGIENISTS, AND PHYSIOLOGISTS ARE YIELDING INCREASINGLY APPARENT RESULTS. THEY HELPED DEVELOP THE CITY'S FIRST PLANT WIDE NOT PLAN HERE. AMONG THE MOST EFFECTIVE MEASURES IMPLEMENTED TO IMPROVE WORKING CONDITIONS WERE THE REPLACEMENT OF ASPHALT FLOORS BY CONCRETE MOSAIC, DECREASING INDUSTRIAL NOISE, AND SO FORTH.

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3/3. 022

UNCLASSIFIED

PROCESSING DATE--09OCT70

CIRC ACCESSION NU--AN0113045

ABSTRACT/EXTRACT--THE IMPROVEMENT OF WORKING CONDITIONS IN THIS PLANT CONTRIBUTED TO A DECREASE OF MORE THAN 30PERCENT IN THE SICK RATE FOR THE LAST FIVE YEARS. MEDICAL INDUSTRY ENTERPRISES, THE SVERDLOVSK EMA PLANT AND THE SVERDLOVSK PLANT OF MEDICAL PREPARATIONS, WERE ALSO REPRESENTED AT THE EXHIBITION. THE LATTER, FOR EXAMPLE, MASTERED A NEW TECHNOLOGY FOR THE PRODUCTION OF THEOPHYLLINE. THANKS TO THIS, GASEOUSNESS (ZAGAZOVANNOST') HAS BEEN ELIMINATED, AND THE WORKERS' CONTACT WITH THE POISONOUS RAW MATERIALS HAS ALSO BEEN ELIMINATED. AT THE SAME TIME, THE PRODUCTION CYCLE HAS BEEN REDUCED BY 30PERCENT, OUTPUT HAS BEEN INCREASED 50PERCENT, AND THE YEARLY ECONOMIC SAVINGS IS 600,000 RUBLES. THE EXHIBITION OPENED ON THE DAY WHEN SVERDLOVSK WORKERS STOOD A LABOR WATCH IN HONOR OF THE 100TH YEAR SINCE THE BIRTH OF V. I. LENIN.

UNCLASSIFIED

USSR

UNCLASSIFIED
June 1, 1955

BORISOV, B.
KRAVCHENKO, A. / coauthors of article, "The Party
Leader", based upon discussions with
secretaries of primary Party organizations (whom the
authors apparently visited on the spot). They refer
to remarks of Khrushchev, [N.S.], made at plenum of
CPSU CC in January [1955] on the calling of Party
workers, their tasks, etc. "A secretary," they write,
"is an organizer."

Partiinaya zhizn' No. 10 (May), 1955 (6-1-55)

km 8-55

BORISOV, B. A.

Change or addition to the biographic sketches included in the "Portrait of Prominent Personalities in the USSR," compiled by the Central Committee of the CPSU, Moscow, 1968, by the Central Committee.

POSITION:

CHIEF: Chairman, All-Union Board of Trade

SOURCE: Izvestiya, 3 Jun 1970

Source: Portrait of Prominent USSR Personalities, Vol 3, Oct 70 No 4
Compiled by the Central Committee of the CPSU, Moscow, 1970.
Originally published in Portrait of Prominent USSR Personalities, Vol 3, No 4, Oct 1970.
Published by the Central Committee.

END OF PAGE

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-13-

Rpt 15 Oct 61

EA-072

The Leningrad Oblast Party Organization Elected the Following Persons
Delegates (Voting or Non-voting, as indicated) to the XXII CPSU Congress:
[Cont from card 12, see TITOV, S. P., same date]

Voting Delegates: (contd)

SHELUKHIN, A. P.;
SHIBALOV, A. N.;
SHMAKABALOV, V. A.;
SHUMILOV, V. T.;
SHCHERBAKOVA, L. Ye.; and
YUROV, S. M.

Non-voting Delegates:

BOYCHENKO, I. V.;
BORISOV, B. A.;
VATRUKHEN, M. M;

[Cont on card 14, see GARMONOV, I. V., same date]

Leningradskaya Pravda, 15 Oct 61

52
(9)
as

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Rpt 12 Sep 61
88 567

The following persons were elected Voting Delegates to the XXII CPSU Congress

from the Vyborgskiy Rayon Party organization:

IRKHIPOV, A. M., Mechanic, Plant im. Karl Marx;
ANDREYSVA, M. I., Fitter, Svetlana Plant;
BOLOTUKHIN, V. V., Chief, Political Adm, Leningrad Military District;
ZELINSKIY, I. G., Lathe Operator, Polytechnic Institute im. Kalinin;
KUZNETSOV, A. A., Sec, Raykom;
KOROTKOV, V. I., Milling Machine Operator, Russkiy dizel' Plant;
KONSTANTINOV, B. P., Director, Physicotechnical Institute;
KOROL'KOVA, N. N., Worker, Krasnyy mayak Combine;
LYAPUNOV, M. N., Engineer;
PSURTSEV, N. D., Min, Communications USSR;
SMIRNOV, V. S., Rector, Polytechnic Institute im. Kalinin;
TOLSTIKOV, V. S., Sec, Obkon;

and

SHELUNKHIN, A. P., Sec, Party Com, Mil Medical Academy im. S. M. Kirov.

The following was elected a Non-Voting Delegate to the XXII CPSU Congress

from the Vyborgskiy Rayon Party organization:

BORISOV, B. A., Sec, Party Com, Krasnaya garya Plant.

Leningradskaya Pravda, 10 Sep 61

77
(12)

Borisov, Boris Aleks. (P)

USSR

USSR

17-31 Oct 61

List of delegates to the XXII Party Congress, CPSU, holding consultative votes. Information appears in the following sequence: Name, Post or Profession, Party Organization from which elected.

[Cont from card ; see BELEVTSOVA, Vera Aksent'yevna, same date]

BOYCHENKO, Ivan Vasil'yevich, 1st Dep Chief, Pol Admin, Leningrad Mil District -- Leningrad

BOLIBRUKH, Andrey Vlasovich, Military Serviceman -- Estonia

BOLTOVSKIY, Vasil'y Dmitriyevich, Military Serviceman -- Kuybyshev

BOLFA, Georgiy Trofimovich, Chan, Kolkhoz imeni Lenin, Bendery Rayon -- Moldavia

BOL'SHAKOVA, Valentina Pavlovna, Dairymaid, Kolkhoz imeni Lenin, Lyubytinskiy Rayon -- Novgorod

BONDARENKO, Grigoriy Ivanovich, Chief, Admin -- Ternopol'

BONDAR', Zhanna Zinov'yevna, Foreman, Sector, Sewing Factory -- Volynskiy

BORISENKOV, Mikhail Dmitriyevich, Chan, Uinskiy Rayon Exec Com -- Perm'

BORISOV, Boris Alekseyevich, Sec, Party Com -- Leningrad

BORISOVA, Zinaida Vasil'yevna, Sec, Party Bureau, Combine -- Novosibirsk

[Cont on card ; see BORODA, Afanasiy Yefimovich, same date]

58

(10)

hs

Stenographic Report, XXII Party Congress, CPSU, Vol. III

USSR

UDC 654.924

BORISOV, B. K., DEMIN, YU. I., KURAPOV, YE. F.

"Alarm Signal Device"

USSR Author's Certificate No 310278, filed 17 Nov 69, published 20 Sep 71 (from RZh --Avtomatika, Telemekhanika i vychislitel'naya tekhnika, No 4, Apr 72, Abstract No 4A483P)

Translation: An alarm signaling device is proposed which contains alarm signal sensors connected via a communication line to the central apparatus for signal reception from the sensors. For simplification, the device is equipped with an oscillator the controlling input of which is connected to the output of the central apparatus; and the output, to the communication line to which the sound indicator shunted by a breaker switch is connected in series. The communication line between the sound indicator and the sensors is shunted by a diode included in the return direction. There is 1 illustration.

1/1

USSR

UDC: 681.327.66

LOMANOV, V. P., BORISOV, B. M.

"A Data Storage Unit"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 20, Jul 72, Author's Certificate No 343302, Division G, filed 17 Sep 70, published 22 Jun 72, p 175

Translation: This Author's Certificate introduces a data storage unit which is made up of matrices, each of which is divided into two identical parts, left and right, whose memory elements are based on two cores with a resistive coupling winding. The cores are threaded by interrogation, record and bias windings separate for each half of the matrix. Also making up the storage unit are DC shapers and a transformer. As a distinguishing feature of the patent, speed and reliability are increased by connecting the bias winding of each section on the left of the preceding matrix in series-aiding with the bias winding of each right section of the following matrix, and connecting the bias winding of each section on the right of the preceding matrix in series-aiding with the bias winding of the left section of each following matrix. The inputs

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USSR

LOMANOV, V. P., BORISOV, B. M., USSR Author's Certificate No 343302

of the bias windings of each half of the initial matrix are connected respectively to the two DC shapers, and the outputs of the bias windings of each half of the final matrix are connected to the transformer windings, the bias windings of one half of the matrix being connected aiding, while the others are opposed.

2/2

- 13 -

USSR

UDC: 621.396.2:621.371.1

BORISOV, A. I., BORISOV, B. P.

"On Damping of Nonlinearity of the Line-Channel Amplifiers in Multichannel Systems"

Sb. nauchn. tr. TsNII svyazi (Collection of Scientific Works of the Central Scientific Research Institute of Communications), 1970, vyp. 1, pp 16-26
(from RZh-Radiotekhnika, No 12, Dec 70, Abstract No 12A245)

Translation: In calculations of long-range multichannel communications systems, it is necessary to account for damping of nonlinearity in the line-channel amplifiers. The actual values of scatter in attenuation of nonlinearity are analyzed in a batch of line amplifiers. A method is proposed to account for this scatter on the basis of a procedure in which noises of nonlinear origin are computed. Examples are given of numerical evaluation of noises of nonlinear origin together with the permissible limits for scatter in values of attenuation of nonlinearity. Two illustrations, one table, bibliography of two titles. L. K.

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USSR

UDC 621.396.6-181.48

BORISOV, B. S., VARLAMOV, I. V., and LAVRISHCHEV, V. P.

"Optoelectronic Microcircuits for Galvanic Uncoupling"

Elektron. prom-st'. Nauch.-tekhn. sb. (Electronics Industry. Collected Scientific-Technical Works), 1972, No 2, pp 70-73 (from RZh-Radiotekhnika, No 11, Nov 72, Abstract No 11 V213)

Translation: An example is given for the classification of optoelectronic uncoupling microcircuits. Data is given on the use of light diodes and photoreceptors in these circuits. Four new microcircuits are described: hybrid switching device (optoelectronic pair of plus amplifiers), commutators of high voltage circuits, direct current commutator up to 50v based on semiconductor triodes, and an analog signal commutator. Original article: six illustrations and ten bibliographic entries. N.S.

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- 93 -

USSR

UDC 621.391.63

AVTONOMOV, V. A., BORISOV, B. S., GRUDININ, A. S., VARLAMOV, I. V., KANDYBA, Pe, Ye., KOLYASNIKOV, V. A., KRASYUK, B. A., MESKIN, S. S., PETRUSEVICH, V. A., POLTORATSKIY, E. A., RAVICH, V. N., and CHICHERIN, L. A.

"High-Speed Optical-Electronic Switch"

Elektron. tekhnika. Nauch.-tekhn. sb. Mikroelektronika (Electronics Technology. Scientific-Technical Collection. Microelectronics), 1971, Issue 2(28), pp 3-8 (from RZh-Elektronika i yeye primeneniye, No 8, August 1971, Abstract No 8B321)

Translation: An optical-electronic pair is developed, on the basis of which a hybrid microcircuit is produced which assures a high galvanic decoupling and is compatible with respect to the input and output parameters with integrated logic circuits manufactured by domestic industry. 4 ill. 4 ref. Summary.

1/1

USSR

UDC: 632.384.66

BORISOV, D. G., GRYZLOV, A. I., PRUDNIKOV, I. A., EMIROV, E. Kh.

"A Method of Modulating the Energy of a Flow of Charged Particles"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, No 10, Apr 71, Author's Certificate No 270918, Division H, filed 4 Dec 68, published 11 Mar 71, p 238

Translation: This Author's Certificate introduces a method of modulating the energy of a flow of charged particles by sending particles grouped into bunches and accelerated to relativistic energy through an iris traveling-wave waveguide. As a distinguishing feature of the patent, the method is designed to produce a line spectrum in short time intervals. Electromagnetic oscillations are excited in the iris waveguide with a period which does not coincide with the prf of the relativistic bunches of accelerated charged particles.

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- 106 -

172 029 UNCLASSIFIED PROCESSING DATE--ZUNOV70
TITLE--APPARATUS FOR STUDYING THE THERMAL AND MECHANICAL PROPERTIES OF
POLYMER FILMS -U-
AUTHOR-(C4)-BORISOV, D.G., BABKHOVICH, V.A., FADEYEVA, A.V., SHCHERBAK,
P.N.
COUNTRY OF INFO--USSR
SOURCE--ZAVOD. LAB. 1970, 36(5), 615-17
DATE PUBLISHED-----70
SUBJECT AREAS--MATERIALS, METHODS AND EQUIPMENT
TOPIC TAGS--PLASTIC FILM, MATERIAL TESTING EQUIPMENT,
POLYTETRAFLUOROETHYLENE, THERMAL EFFECT, ANNEALING, PLASTIC MECHANICAL
PROPERTY/(U)FTOROPLAST 4M FLUORINE PLASTIC
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3004/1970 STEP NO--UR/0032/70/036/005/0615/0617
CIRC ACCESSION NO--AP0132231
UNCLASSIFIED

2/2

G29

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0132231

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE SAMPLE FILMS WERE HELD HORIZONTALLY BY A FORCE JUST ADEQUATE TO PREVENT SAGGING DUE TO GRAVITY. DURING HEATING THE HORIZONTAL POSITION WAS MAINTAINED BY THE DISPLACEMENT OF THE HOLDING CLAMPS. THE TEMP. VS. DEFORMATION (EPSILON) CURVES WERE OBTAINED FOR POLY(TETRAFLUOROETHYLENE) (FIDROPLAST 4M) FILMS ANNEALED AT VARIOUS TEMPS. THE FILMS ANNEALED AT 255DEGREES OR 280DEGREES HAD POS. EPSILON, AS WELL AS NEG. EPSILON (SHRINKAGE). THE FILMS ANNEALED AT 265DEGREES HAD ONLY POS EPSILON. FACILITY: NAUCH.-ISSLEC. PROEKT. INST. POLIM. PLASTMASS, Leningrad, USSR.

UNCLASSIFIED

USSR

UDC 541.64:542.953

BORISOV, G., Institute of Organic Chemistry, Sophia

"Synthesis of Organophosphorus Oligomers and Polymers by Polycondensation"

Moscow, Vysokomolekulyarnyye Soyedineniya, Vol 15, No 2, Feb 73, pp 275-283

Abstract: From polyfunctional phosphine oxides, phosphinous and phosphinic acids polymeric and oligomeric ethers and esters have been synthesized as well as their diisocyanates as addition products. The transesterification of phosphonic acid esters of dialkyl phosphites by polyols yielded oligoesters, while the addition of chloral to oligophosphites produced phosphorus- and chlorine-containing oligomers. Oligoester methacrylates and polyurethanes were prepared from oligophosphites and from oligophosphites and diisocyanates, respectively. The relationship between the structures and properties of oligomers and polymers was investigated. Most of the polymers obtained have self-extinguishing properties and exhibit enhanced adhesion to glass and metal surfaces.

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UNCLASSIFIED

PROCESSING DATE--18SEP70

TITLE--SYNTHESES BASED ON TETRAMETHYLOLPHOSPHONIUM CHLORIDE. SOME
TRANSFORMATIONS OF TRIS(CHLOROMETHYL)PHOSPHINE AND

AUTHOR--(05)-TSVETHKOV, YE.N., BORISOV, G., SIVRIYEV, KH., MALEYANNAYA,
R.A., KABACHNIK, M.I.

COUNTRY OF INFO--USSR

B

SOURCE--ZH. OBSHCH. KHIM. 1970, 40(2) 285-91

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CHEMICAL SYNTHESIS, ORGANIC PHOSPHORUS COMPOUND, CHLORINATED
ORGANIC COMPOUND, THIOL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRA--1985/1397

STEP NO--UR/0079/70/040/002/0285/0291

CIRC ACCESSION NO--AP0101489

UNCLASSIFIED

2/3 015

UNCLASSIFIED

PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0101489

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ADDN. OF 350 G (HCH SUB2) SUB4 PCL TO 1680 G PCL SUB5 IN 2 L. CCL SUB4 AT REFLUX AND HEATING 4 HR GAVE 97PERCENT (CLCH SUB2) SUB4 PCL (I), M. 198 TO 90DEGREES. I (200 G) TREATED WITH 60.7 G NaOH IN 300 ML H SUB2 O AT 10 TO 15DEGREES IN 400 ML H SUB2 O TO 400 ML CHCL SUB3 UNTIL ALK. TO PHENOLPHTHALEIN, GAVE 81.5PERCENT (CLCH SUB2) SUB3 P (II), B SUB2 56 TO 7DEGREES, D PRIME20 2.4204, N PRIME20 D 1.5530, WHICH ON STANDING DEPOSITED A FLAKY COLORLESS SOLID OF UNDET. COMPN.; DURING EVAPN. OF THE SOLVENT FROM II THE TEMP. MUST BE HELD UNDER 90DEGREES AS EXPLOSIONS OCCURED AT 100DEGREES OR HIGHER. II AND 24PERCENT NaOH AT 10 TO 20DEGREES THEN AT REFLUX 3 HR UNTIL HOMOGENEOUS GAVE MEP(O)(CH SUB2 CL) SUB2 (III), B SUB7 149 TO 50DEGREES, M. 49 TO 50 DEGREES. III ALSO FORMED AFTER SIMILAR HEATING OF II WITH H SUB2 O ALONE. HEATED WITH NaOAc ACOH 6 HR AT 200DEGREES III GAVE THE DIACETATE, B SUB5 163 TO 4DEGREES, 1.2326, 1.4670. ALSO PREPD. FROM II AND ACOH ACONA 10 HR AT 150DEGREES. HEATING II WITH ETSN 9 HR AT 130DEGREES IN ET SUB2 O IN AN AUTOCLAVE GAVE 84PERCENT (ETSCH SUB2) SUB3 P, B SUB2 137 TO 8DEGREES, 1.0749, 1.5665. MEP(O) (CH SUB2 CL) SUB2 (IV) AND ET SUB2 NH IN 15 HR AT 125DEGREES GAVE 49PERCENT MEP(O)(CH SUB2 NET SUB2) SUB2, B SUB2 TIMES SUB5 118 TO 190DEGREES, 0.9391, 1.4681.

UNCLASSIFIED

3/3 015

UNCLASSIFIED

PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0101489

ABSTRACT/EXTRACT--HEATING 3 G IV AND 10 G PH SUB3 P IN ME SUB2 NCHO 12 HR AT 150 TO 60DEGREES GAVE ON ADDN. OF ME SUB2 CO 67.5PERCENT (PH SUB3 PCH SUB2)SUB2 P(O)ME PRIME POSITIVE PRIME POSITIVE2 CL PRIME NEGATIVE, M. 300 TO 1.5DEGREES. IV (4G) IN MEPH AND A REACTION PRODUCT OF 1.37 G NA AND 10 ML MEOCH SUB2 CH SUB2 OH IN MEPH GAVE IN 6 HR REFLUXING 53.5PERCENT MEP(O)(CH SUB2 OCH SUB2 CH SUB2 OME) SUB2 B SUB5 185 TO 6DEGREES, 1.1117, 1.4625. SIMILARLY WAS PREPD. 52PERCENT MEP (O) (CH SUB2 OCH SUB2 CH SUB2 OBU) SUB2, B SUB5 210 TO 11.5DEGREES, 1.0082, 1.4547. PHONA SIMILARLY GAVE 83PERCENT MEP(O)(CH SUB2 OPH) SUB2, M. 96 TO 7 DEGREES. SIMILARLY WAS PREPD. 80PERCENT P TOLYL ANALOG, M. 122 TO 4DEGREES; 79PERCENT P NITROPHENYL ANALOG, M. 169 TO 70DEGREES; M NITROPHENYL ANALOG, M. 90 TO 1DEGREES; P CARBO METHOXYPHENYL ANALOG, M. 133 TO 5DEGREES; P CARBONYPHENYL ANALOG, M. 295 TO 6DEGREES; M ISOMER, M. 142 TO 3 DEGREES.

UNCLASSIFIED

1/2 038 UNCLASSIFIED PROCESSING DATE--11SEP70
TITLE--POLYMERS PREPARED FROM BIS(4-CARBOXYPHENOXYMETHYL)(METHYL)PHOSPHINE
OXIDE -U-
AUTHOR--BORISOV, G., SIVRIEV, KHR., TSVETKOV, E.N., KABACHNIK, M.I. *B*
COUNTRY OF INFO--USSR
SOURCE--VYSOKOMOL. SOEDIN., SER. A 1970, 12(3) 620-5
DATE PUBLISHED----- 70

SUBJECT AREAS--CHEMISTRY, MATERIALS

TOPIC TAGS--POLYMER, ESTERIFICATION, ORGANIC PHOSPHORUS COMPOUND, CARBOXYL
RADICAL, BENZENE DERIVATIVE, POLYESTER RESIN, PHTHALATE, THERMAL
STABILITY, ADHESION, METAL TO NONMETAL BONDING

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1989/0242

STEP NO--UR/0459/70/012/003/0620/0625

CIRC ACCESSION NO--AP0106898

UNCLASSIFIED

2/2 038

UNCLASSIFIED

PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0106898

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE TRANSESTERIFICATION OF (4-MEO SUB2 CC SUB6 H SUB4 OCH SUB2) SUB2 P(O)ME (I) WITH HOROH (R IS (CH SUB2) SUB2, CH SUB2 CHME, (CH SUB2) SUB4, (CH SUB2) SUB5, (CH SUB2) SUB6, OR (CH SUB2 CH SUB2) SUB2 O) IN THE PRESENCE OF (ACO) SUB2 ZN AS THE CATALYST GAVE 87-90PERCENT POLYESTERS (II). SIMILARLY THE TRANSESTERIFICATION OF I,DI,ME TEREPHYHALATE MIXT. WITH HOROH GAVE A MIXT. OF II, CORRESPONDING POLYTEREPHTHALATES (III), AND COPOLYMERS. THE SOLY. OF II AND III IN CHCL SUB3 DIFFERS CONSIDERABLY, ENABLING SEPN. TURBIDIMETRIC TITRN. OF THE HOMOPOLYESTERS, COPOLYMER MIXTS., USING TETRACHLOROETHANE AS THE SOLVENT AND MECH AS THE PRECIPITANT, DEMONSTRATED THE EXISTENCE OF THE COPOLYMER. THE COPOLYMER M.P. DECREASES WITH THE INCREASE CONTENT. THE THERMAL STABILITY OF II IS SUPERIOR TO THAT OF III; AT 300DEGREES IN THE AIR II LOSE 4-52PERCENT WT. IN 3 HR. II ARE SEMI TRANSPARENT; THEIR MELTS CAN BE DRAWN INTO FIBERS AND FORMED INTO FILMS. THE COPOLYMERS CONTG. LARGER THAN 20PERCENT I UNITS LOSE 4-5PERCENT WT. AT 300DEGREES IN THE AIR DURING 3 HR. THEIR ADHESION TO STEEL INCREASES TO 84 KG-CM PRIME2 WITH INCREASING I UNIT CONTENT.

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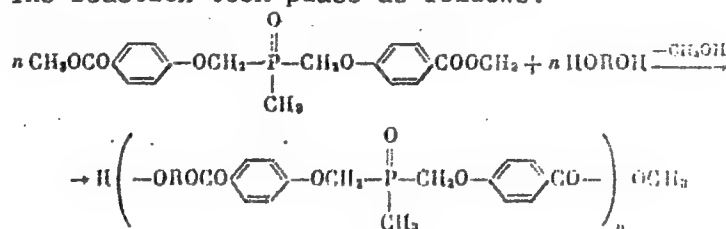
UDC: 541.64:678.674:86

BORISOV, G., SIVRIYEV, KHR., TSVETKOV, YE. N., KABACHNIK, M. I., Institute of Organic Chemistry of the Bulgarian Academy of Sciences, Sofia; Institute of Organo Elemental Compounds, Moscow, Academy of Sciences USSR

"Synthesis of Polymers from Di-(4-carboxyphenoxyethyl)methylphosphine Oxide"

Moscow, Vysokomolekulyarnyye Soyedineniya, Vol XII, No 3, Mar 70, pp 620-625

Abstract: Polyesters were synthesized from di-(4-carboxyphenoxyethyl)-methylphosphine oxide and the following glycols: ethylene glycol, propylene glycol-1,2, n-butylene glycol-1,4, pentamethylene glycol, hexamethylene glycol and diethylene glycol. Ester exchange was carried out in the presence of zinc acetate as a catalyst in an excess of glycol in a purified nitrogen atmosphere. The reaction took place as follows:



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USSR

BORISOV, G., et al, Vysokomolekulyarnyye Soyedineniya, Vol XII, No 3, Mar 70, pp 620-625

The resultant polyesters in the fused state are semitransparent vitreous substances. After reprecipitation, the compounds are colorless or yellowish powders. Fibers may be drawn from the melts, and the solutions produce excellent films. They are soluble in chloroform, dimethylformamide, cresol, and nitrobenzene. It was found that the melting point of the polyester decreased with an increase in the number of methylene groups in the glycol. The polyesters are fairly heat resistant, losing from 4 to 20% of their total weight when heated to 300°C for 3 hrs. It was also found that the thermal stability of the polyester decreases with an increase in the number of methylene groups in the glycol. The polyester products adhere well to glass and metal surfaces and will not burn when removed from an open flame.

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- 107 -

B

UDC 546.18.181.1

USSR

TSVETKOV, YE. N., BORISOV, G., SIVRIEV, KH., MALEVANNAYA, R. A., and KABACHNIK, M. I., Institute of Organoelemental Compounds, Academy of Sciences USSR, and Institute of Organic Chemistry, Bulgarian Academy of Sciences, Sofia

"Syntheses Based on Tetramethylolphosphonium Chloride. Some Transformations of Tri(chloromethyl)phosphine and Methyl-di(chloromethyl)phosphine Oxide"

Leningrad, Zhurnal Obshchey Khimii, Vol 40, No 2, Feb 70, pp 285-291

Abstract: The article describes some reactions of tri(chloromethyl)-phosphine and a number of transformations of methyl-di(chloromethyl)-phosphine oxide. Reactions of tri(chloromethyl)phosphine with water and with sodium acetate in glacial acetic acid are accompanied by a pseudoallyl rearrangement and yield methyl-di(chloromethyl)phosphine oxide and methyl-di(acetoxymethyl)phosphine oxide respectively. Tri-(chloromethyl)phosphine reacts with sodium ethylmercaptide in the presence of an excess of ethyl mercaptan without a rearrangement to

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USSR

TSVETKOV, YE. N., et al., Zhurnal Obshchey Khimii, Vol 40, No 2, Feb 70, pp 285-291

give tri(ethylmercaptomethyl)phosphine. Substitution reactions were staged involving the displacement of chlorine atoms in methyldi(chloromethyl)phosphine oxide by dialkylamino, alkoxy, arylhydroxy and other groups.

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- 68 -

Foundry

USSR

UDC 621.74.045.001

LAKEYEV, A. S., and BORISOV, G. P.

"Principles of Rheology of Model Materials for Investment Casting"

Osnovy Reologii Model'nykh Materialov Dlya Lit'ya po Vyplavlyayemym Modelyam
[English Version Above], Kiev, Naukova Dumka Press, 1971, 132 pages

Translation of Annotation: This book deals with an insufficiently studied problem -- determination of the rheological characteristics of model compositions used in investment casting in the viscous-plastic temperature interval. A method of determining the rheological characteristics of materials and compositions broadly used in practice, based on the physico-chemical mechanics of materials, is presented. The properties of new model compositions (ILP and IPL) and experience in their application in production are presented.

This book is designed for scientific and engineering-technical workers who are dealing with problems of investment casting.

TABLE OF CONTENTS

Foreword
1/5

3

USSR

LAKEYEV, A. S., and BORISOV, G. P., Osnovy Reologii Model'nykh Materialov
Dlya Lit'ya po Vyplavlyayemym Modelyam, Kiev, Naukova Dumka Press, 1971, 132
pages

Chapter I. Characteristics of Model Materials	5
1. Purpose and Characteristics of Model Materials	5
2. Model Compositions Used in Investment Casting Practice	6
3. Manufacture of Models and Specifics of Use of Model Compositions	11
Chapter II. Basic Theoretical Prerequisites for Development of Model Compositions	14
1. Methods of Study of Characteristics of Model Compositions	14
2. Classification of Model Compositions as Dispersed Systems with Coagulating Structure Formation	16
3. Basic Statements From Physical-Chemical Mechanics of Dispersed Systems	19
4. Methods of Determining Structural and Mechanical Charac- teristics of Dispersed Systems With Coagulating Structure Formation	23
5. Plan of Development of New Model Compositions	25

2/5

- 25 -

USSR

LAKEYEV, A. S., and BORISOV, G. P., Osnovy Reologii Model'nykh Materialov Dlya Lit'ya po Vyplavlyayemym Modelyam, Kiev, Naukova Dumka Press, 1971, 132 pages.

Chapter III. Methods of Studying Structural and Mechanical Characteristics of Model Compositions	27
1. Specifics of Operation of Model Compositions From the Standpoint of Physical and Chemical Mechanics	27
2. Selection of Methods From Physical and Chemical Mechanics	28
3. Method of Determining Rheological Characteristics of Model Compositions	29
4. Method of Determining Statistical Limiting Shear Stress	38
5. Method of Determining Plastic Strength of Structures	39
Chapter IV. Rheological Characteristics of Initial Model Materials and Their Compositions in the Temperature Interval of the Viscous-Plastic State	44
1. Some Specifics of the Determination of Initial Data	44
2. Operating Temperatures for Pressing and Melting Point of Model Compositions	45

3/5

USSR

LAKEYEV, A. S., and BORISOV, G. P., Osnovy Reologii Model'nykh Materialov Dlya Lit'ya po Vyplavlyayemym Modelyam, Kiev, Naukova Dumka Press, 1971, 132 pages

- | | |
|--|----|
| 3. Rheological Characteristics of Initial Model Materials | 53 |
| 4. Rheological Characteristics of Binary Model Compositions | 61 |
| 5. Rheological Characteristics of Model Compositions Consisting of Three and More Components | 80 |

Chapter V. Improvement of Rheological and Operational Characteristics of Model Compositions

- | | |
|---|-----|
| 1. Selection of Basic Materials and Technological Additives | 85 |
| 2. Influence of Plasticizing Additives on Rheological Characteristics of Paraffin-Lignite Wax Binary Systems | 87 |
| 3. Structures of Paraffin-Lignite Wax-Technical Vaseline System | 95 |
| 4. Influence of Plasticizing Additives to Paraffin-Lignite Wax Binary System on Its Operational Characteristics | 97 |
| 5. Influence of New Model Compositions on Operation Characteristics of Ceramic Molds | 104 |

4/5

- 24 -

USSR

LAKEYEV, A. S., and BORISOV, G. P., Osnovy Reologii Model'nykh Materialov
Dlya Lit'ya po Vyplavlyayemym Modelyam, Kiev, Naukova Dumka Press, 1971,
132 pages

Chapter VI. Experience of Industrial Application of New Model	114
Compositions	114
1. Industrial Testing of Model Compositions	119
2. Introduction of Model Compositions to Production	124
Bibliography	

5/5

1/2 027 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--DUCTILITY OF HIGH STRENGTH CONSTRUCTIONAL ALLOY STEELS -U-

AUTHOR--(05)-BRAUN, M.P., BORISOV, G.P., KRUKOVSKAYA, G.N., MORZHARETTO,
A.A., SERGEYEV, I.V.
COUNTRY OF INFO--USSR

B

SOURCE--IZV. VYSSH. UCHEB. ZAVED., CHERN. MET. 1970, 13(2), 123-5

DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS, MECH., IND., CIVIL AND MARINE ENGR

TOPIC TAGS--STRUCTURAL STEEL, IMPACT STRENGTH, STEEL HEAT TREATMENT, STEEL
HARDENING, METAL CASTING, ALLOY STEEL, CHROMIUM STEEL, MANGANESE STEEL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY KEEL/FRA--1994/1787

STEP NO--UR/0148/70/013/002/0123/0125

CIRC ACCESSION NO--AT0115616

UNCLASSIFIED

2/2 027

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--ATO115616

ABSTRACT/EXTRACT--(U) GP-O- ABSTRACT. THE IMPACT STRENGTH OF THE CAST CONSTRUCTION STEEL WAS INCREASED BY APPLYING OPTIMAL ALLOYING AND HEAT TREATMENT WHILE MAINTAINING 36-37 HRC HARDNESS. EIGHT GRADES OF STEEL (CR 1.08-1.66, SI 0.40-2.79, MN 1.58-2.29PERCENT) WERE MELTED IN A BASIC INDUCTION FURNACE DEOXIDIZED WITH 0.1PERCENT AL, AND CAST. THE CASTINGS WERE ANNEALED 6 HR AT 950DEGREES AND CUT INTO BARS WHICH WERE NORMALIZED AT 950DEGREES. BILLETS WERE (1) QUENCHED FROM 930-40DEGREES, (2) NORMALIZED AT 930-40DEGREES WITH SUBSEQUENT TEMPERING AT 200DEGREES, OR (3) HEATED 1 HR AT 300-320DEGREES AND QUENCHED IN MOLTEN SALTPETER. THE IMPACT STRENGTH AND HARDNESS WERE DETD. AFTER EACH OF THE 3 HEAT TREATMENT CONDITIONS: A STEEL AT GIVEN CONDITIONS AFTER LOW TEMP. TEMPERING MAY HAVE A LARGER OPTIMUM CONC. OF CR, MN AND SOME OTHER ALLOYING ELEMENTS THAN AFTER MEDIUM OR HIGH TEMP. TEMPERING. THE OPTIMUM CONCNS. OF THE ALLOYING INGREDIENTS ARE INTERRELATED. FACILITY: INST. PROBL. LIT'VA, KIEV, USSR.

UNCLASSIFIED

1/2 014 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--PREPARATION OF PATTERNS DURING INVESTMENT CASTING -U-

AUTHOR--(02)-LAKEYEV, A.S., BORISOV, G.P.

COUNTRY OF INFO--USSR

SOURCE--IZV. VYSSH. UCHEB. ZAVED., CHERN. MET. 1970, 13(2), 136-42

DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS, MECH., IND., CIVIL AND MARINE ENGR

TOPIC TAGS--INVESTMENT CASTING, RHEOLOGIC PROPERTY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY KEEL/FRAME--1997/1391

STEP NO--UR/0148/70/013/002/0136/0142

CIPC ACCESSION NO--A10120184

UNCLASSIFIED

2/2 014

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AT0120184

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A METHOD WAS DEVELOPED FOR THE DETN. OF THE RHEOLOGICAL CHARACTERISTICS OF PATTERN COMPS., BASED ON THE EXTRUSION OF MATERIAL IN THE DUCTILE PLASTIC CONDITION THROUGH A CAPILLARY OF A GIVEN LENGTH AND DIAM. THIS METHOD GAVE A COMPLETE IMITATION OF THE SQUEEZE PRESSING PROCES. THE DEPENDENCE WAS STUDIED OF RHEOLOGICAL PROPERTIES ON TEMP. WITHIN THE WORKING RNAG (TEMP. RANGE AT WHICH PATTERN COMPS. ARE IN THE DUCTILE PLASTIC STATE). THE DETN. OF THE WORKING TEMP. AT WHICH THE PATTERN COMPN. SHOULD BE INTRODUCED INTO THE CAVITY OF THE CASTING DIE CAN PROCEED BY 2 METHODS: (1) DET. THE DEPENDENCE OF PLASTIC DUCTILITY ON TEMP. AND DET. THE TEMP. AT WHICH THIS CURVE BENDS, (2) DET. THE M.P. (T SUBM) OF THE PATTERN COMPN. AND THEN CALC. THE WORKING TEMP. (T SUBW) FROM THE EXPTL. RELATION $T_{SUBW} = 0.8 T_{SUBM}$. FACILITY: INST. PROBL. LIT'YA, KIEV, USSR.

UNCLASSIFIED

Water Treatment

USSR

BORISOV, G. S.

"Conference on Methods of Separating Solutions and Desalinating Water by Using Semipermeable Membranes"

Moscow, Teoreticheskii Osnovy Khimicheskoy Tekhnologii, Vol 4, No 5, Sep/-
Oct 70, pp 789-790

Abstract: A Conference on Methods of Separating Solutions and Desalinating Water by Using Semipermeable Membranes was held 23-24 March 1970 at the All Union Scientific Research Institute of Water Supply, Sewer Systems, Hydraulic Engineering Structures, and Hydrological Engineering. The Conference was organized by the Scientific Council on Theoretical Principles of Chemical Technology of the Academy of Sciences of the USSR, The Scientific Council on Large-Scale Use of Water Resources of the State Committee of the Council of Ministers of the USSR on Science and Technology, the host Scientific Research Institute and the Moscow Institute of Chemical Technology imeni D. I. Mendel-eyev. A total of 18 reports were presented from 10 scientific research institutes and colleges. The introductory speech was given by V. A. MALYUSOV, Corresponding Member of the Academy of Sciences of the USSR. Survey reports 1/2

USSR

BORISOV, G. S., Teoreticheskiye Osnovy Khimicheskoy Tekhnologii, Vol 4, No 5, Sep/Oct 70, pp 789-790

were given by Yu. I. DYTNERSKIY on some problems of the mechanism of membrane separation of liquid solutions, by G. Z. NEFEDOVA on synthesizing membranes for separating solutions, and by V. A. LISHNEVSKIY on non-Soviet development of hyperfiltration desalinating installations. Most of the papers dealt with problems of separating homogeneous solutions by vaporization through a semi-permeable membrane and by the method of reverse osmosis. Plans are being made to publish summaries of the reports given at the Conference.

2/2

- 94 -

USSR

UDC: 532.529.5/.6

BORISOV, I. D.

"Motion of a Gas Bubble in an Ideal Fluid"

Sb. nauchn. tr. fiz.-tekhn. in-t nizk. temperatur AN USSR (Scientific Works of the Physical-Technical Institute of Low Temperatures, Academy of Sciences, Ukrainian Soviet Socialist Republic) No. 1, 1969, pp 56-63 (from RZh-Mekhanika, No. 8, Aug 70, Abstract No. 8B705)

Translation: The problem is considered of the motion of a gas bubble in an ideal fluid filling a spherical vessel. It is assumed that the motion is derived from a state of rest under the action of a constant uniform field of massive forces. The surface of the bubble is considered spherical at the initial moment and concentric with the vessel. The Lagrange method, in which the state of the individual fluid particles is determined as a function of the time and the parameters (the Lagrange variables) characterizing the positions of the particles at the initial moment of time, is used to describe the motion of the fluid. The solution of the problem (the velocity potential and the shift of
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USSR

BORISOV, I. D., Sb. nauchn. tr. fiz.-tekhn. in-t nizk. temperatur
AN USSR, No 1, 1969, pp 56-63 (from RZh-Mekhanika, No 8, Aug 70,
Abstract No 8B705)

the particles) is assumed analytical in time t . Some of the first terms in the expansion of the solution in a power series of t , determining the initial stage of the motion, are found. For the limiting case of an infinite fluid (the radius of the vessel equal to infinity) graphs for the shape of the bubble surface at various points of time are given. Author's abstract.

2/2

- 42 -

USSR

UDC 612.015.6:577.161.11/:612.766.1

BORISOV, I. M., and MINKH, A. A.. Central Institute of Physical Culture,
Moscow, and Latvian Institute of Physical Culture, Riga

"Vitamin A and Physical Loads"

Moscow, Gigiyena i Sanitariya, No 1, Jan 71, pp 42-46

Abstract: Animal experiments showed that physical effort results in an increase in the rate at which vitamin A is used up in the body. A shortage of vitamin A in rabbits not receiving a supplementary dose of it or receiving a supplementary dose of 3 gamma/day while during periods of physical effort lasting fro 3-5 hrs per day resulted in deterioration of their physical condition, which could be improved by administering 7.5 or 15 gamma/day of the vitamin. Sixty percent of students undergoing training in skiing, whose daily intake of vitamin A was 2,277-2,475 gamma, showed a reduction of the level of vitamin A in the blood in the initial part of a 42-day training period involving 3-3.5 hrs of physical effort per day. The level of carotenoids was also lowered and the students had an impaired capacity for dark adaptation. A supplementary intake of 990-1,980 gamma/day of the vitamin raised its level in the blood and removed symptoms of vitamin deficiency. A supplementary intake of vitamin A in this range, bringing the total consumption of vitamin A

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USSR

BORISOV, I. M., et al, Gigiyena i Sanitariya, No 1, Jan 71, pp 42-46

to 3,000-3,960 gamma/day, may be recommended for athletes and other persons whose bodies are subjected to the stress associated with physical effort.

2/2

- 42 -

AAO 017137-

Soviet Inventions Illustrated, Section II Electrical, Derwent, B

UR 0482

234542 LUMINOUS FLUX RECORDING eliminates errors caused by sensitivity fluctuations of the photoelectric receivers. The flux to be recorded and a control flux are both passed through one receiver and a comparator flux produced by the same source is passed through a second receiver. The readings from both outputs are inserted in a formula quoted in the patent to calculate the required luminous flux. C

2.2.67 as 1131150/26-25. I.M. BORISOV (21.5.69) Bul 4/10.1.69. Class 21g. Int. Cl. C Old. DS

11 11 19600364 4

1/2 009 UNCLASSIFIED PROCESSING DATE--11DEC70
TITLE--OPTICAL COURSE FOR FORM VIII SUBSTANCES AND THEIR TRANSFORMATIONS,
CONCLUSION -U-
AUTHOR--BKRISOV, I.N. **B**
COUNTRY OF INFO--USSR
SOURCE--KHIF. SHK. 1970, 25(2), 76-81
DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS, CHEMISTRY
TOPIC TAGS--CHEMICAL SYNTHESIS, INORGANIC SALT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY FICHE NO----FD70/605002/E12 STEP NO--UR/0509/70/025/002/0078/0081
CIRC ACCESSION NO--AP0139488
UNCLASSIFIED

2/2 CC9

UNCLASSIFIED

PROCESSING DATE--11DEC70

CIRC ACCESSION NO--AP0139488

ABSTRACT/EXTRACT--(U) GP-O- ABSTRACT. FOUR SECTIONS DEALING WITH INVESTIGATION OF SALTS, THE CHARACTERIZATION OF SUBSTANCES, AND THE RELATIONS BETWEEN SUBSTANCES AND THE PREPN. OF SUBSTANCES ON THE BASIS OF THE RELATIONS BETWEEN THEM ARE DESCRIBED. SHORT EXPTS. ILLUSTRATING EACH TOPIC ARE INCLUDED.

UNCLASSIFIED

1/2 014 UNCLASSIFIED PROCESSING DATE--16OCT70
TITLE--DEMOUNTABLE, INTERNALLY FILLED COUNTER FOR MEASURING LOW LEVELS OF
GAS ACTIVITY -U-
AUTHOR-(04)-BESKORSKIY, A.I., ELAKOV, L.S., GUYKHBERG, YE.YA., BORISOV,
I.YA.
COUNTRY OF INFO--USSR
SOURCE--PRIB. TEKH. EKSP. 1970, 1, 64-5
DATE PUBLISHED-----70
SUBJECT AREAS--NUCLEAR SCIENCE AND TECHNOLOGY
TOPIC TAGS--BETA PARTICLE DETECTOR, COUNTING CIRCUIT, TRACE ANALYSIS
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1994/1225 STEP NO--UR/0120/70/001/000/0064/0065
CIRC ACCESSION NO--AP0115242
UNCLASSIFIED

2/2 014

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NU--AP0115242

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE TITLE COUNTER IS CONSTRUCTED ACCORDING TO A SCHEME GIVEN BY G. OSTLUND (1962). THE ELEC. CIRCUIT AND PARAMETERS ARE GIVEN. THE DEMOUNTABLE COUNTER OF BETA RADIATION HAS A WORKING VOL. OF 11. MIN. MEASURABLE ACTIVITY EQUALS 5 TIMES 10 PRIME NEGATIVE12 CI-L.

 $\frac{1}{2} \frac{\partial^2 f}{\partial x^2} + \frac{1}{2} \frac{\partial^2 f}{\partial y^2} = 0$

Microelectronics

USSR

UDC: 621.382.8:317

BORISOV, K. G., Engineer, SITNIKOV, L. S., Doctor of Technical Sciences,
UTYAKOV, L. L., Candidate of Technical Sciences

"New Possibilities for Constructing Universal Count Decades Based on Integrated Circuitry"

Moscow, Pribory i Sistemy Upravleniya, No 4, Apr 72, pp 28-29

Abstract: The article deals with synthesis of universal decades with pulse-position data representation based on integrated circuitry (chiefly transistor-transistor logic). Some of the possibilities for increasing the degree of large-scale integration are also considered. A schematic diagram of the pulse-position decade is given and its operation is described.

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USSR

UDC 612.843.324-053.2

ZHILOV, Yu. D., and BORISOVA, L. A., Institute of the Hygiene of Children and Adolescents, Ministry of Health USSR, Moscow

"The Effects of Artificial Light of Various Spectral Compositions on the Visual Functions of Children and Adolescents"

Moscow, Gigiyena i Sanitariya, No 3, Mar 73, pp 41-44

Abstract: A study was conducted to determine the optimum conditions of artificial lighting for visual perception by children and adolescents. It was established that at a high level of brightness (400 nt) the spectral composition of the light had no effect on the visual functions. At a low level of brightness (100 nt), the optimum results in tests measuring visual perception were obtained by using light sources with a color temperature of 3500°K, while the results obtained with light emitters having a color temperature of 6500°K were inferior to those in tests in which sources with a color temperature of 3500 or 2800°K were used.

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1/2 017
UNCLASSIFIED
TITLE--BIOLOGICAL CHARACTERISTICS OF THE PHAGES OF ENTEROPATHOGENIC E.
COLI, REPORT IV -U-
AUTHOR--(021)-BORISOV, L.B., KHANFIMINA, V.A.
PROCESSING DATE--30OCT70
COUNTRY OF INFO--USSR
SOURCE--ZHURNAL MIKROBIOLOGII, EPIDEMIOLOGII I IMMUNOBIOLOGII, 1970, NR 6,
PP 34-37
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--ESCHERICHIA COLI, PHAGE, LYCINE, MORPHOLOGY
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3001/0724
STEP NO--UR/0016/70/000/006/0034/0037
CIRC ACCESSION NO--AP0126436
UNCLASSIFIED

2/2 017

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0126436

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE AUTHORS DESCRIBE BIOLOGICAL PROPERTIES OF FIVE COLI PHAGES ISOLATED FROM SEWER WATER. ALL THESE PHAGES DIFFERED BY ANTIGENIC PROPERTIES, TEMPERATURE TOLERANCE, RELATION TO URFA, BY MORPHOLOGY OF SIEBEL STAINS, T-SIDE (LYSIN EMULSION) AND ADSORPTION PROPERTIES. BY SPECIFICITY AND RANGE OF LYSIS ACTION TWO PHAGES WERE REFERRED TO THE ϕ COLI 026 GROUP OF PHAGES, AND TWO TO ϕ COLI 0124. FACILITY: I LENINGRADSKIY MEDITSINSKIY INSTITUT IM PAVLOVA.

UNCLASSIFIED

1/2 015 UNCLASSIFIED PROCESSING DATE--09OCT70
TITLE--CORRELATION BETWEEN THE ANTIGENIC PROPERTIES AND THE SENSITIVITY OF
ENTEROPATHOGENIC E. COLI TO BACTERIOPHAGES AND COLICINES -U-
AUTHOR-(03)-BORISOV, L.B., LENTS, E.K., KLIMASHEVSKAYA, V.F.

COUNTRY OF INFO--USSR **B**

SOURCE--ZHURNAL MIKROBIOLOGII, EPIDEMIOLOGI I IMMUNOBIOLOGII, 1970, NR 3,
PP 71-76

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--ESCHERICHIA COLI, BACTERIOPHAGE, AGGLUTINATION, ANTIGEN

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1990/1461

STEP NO--UR/0016/70/000/003/0071/0076

CIRC ACCESSION NO--AP0109521

UNCLASSIFIED

2/2 015

UNCLASSIFIED

PROCESSING DATE--09OCT70

CIRC ACCESSION NO--AP0109521

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE AUTHORS PRESENT EXPERIMENTAL DATA INDICATING THAT BACTERIOPHAGE RESISTANT SUBCULTURES ISOLATED FROM BACTERIOPHAGE SENSITIVE E. COLI 026:B6 STRAINS FAILED TO AGGLUTINATE WITH SPECIFIC OB SERA AND POSSESSED A WIDER SPECTRUM OF SENSITIVITY TO VARIOUS TYPES OF COLICINES THAN BACTERIOPHAGE SENSITIVE AND AGGLUTINABLE FORMS OF THE SAME BACTERIA. THE MAJORITY OF BACTERIOPHAGE RESISTANT SUBCULTURES ISOLATED FROM BACTERIOPHAGE SENSITIVE E. COLI 0111:B4 STRAINS FAILED TO CHANGE THEIR OB ANTIGENS, BUT BECAME RESISTANT TO MANY TYPES OF COLICINES, TO WHICH BACTERIOPHAGE SENSITIVE CULTURES WERE SENSITIVE. IN THE AUTHORS' OPINION THE SAME OR CLOSELY CONNECTED RECEPTORS REALIZE THE BACTERIOPHAGE RECEPTOR AND ANTIGENIC FUNCTION IN E. COLI 026:B6 CULTURES. OB ANTIGENS AND RECEPTORS TO COLICINES IN THESE BACTERIA ARE MORE DIFFERENTIATED THAN IN E. COLI 0111:B4. BACTERIOPHAGE RECEPTOR AND ANTIGENIC FUNCTION IN THE LATTER BACTERIA ARE SEPARATED, AND POSSIBLY, THEIR RECEPTOR APPARATUS TO BACTERIOPHAGE AND COLICINES IS LESS DIFFERENTIATED. COLICINOGENIC PROPERTIES OF THE CULTURES UNDER STUDY WERE INDEPENDENT OF THEIR SENSITIVITY TO BACTERIOPHAGES AND OF AB ANTIGENS.

UNCLASSIFIED

USSR

UDC 621.385.623.4

BERISCV, L.M., ZAKHAROVA, A.N., YEVTUSHENKO, O.V., ZHARYY, YE. V., KAUFMAN, G.M.,
PETROV, D.M., SAMORCDOVA, G.A.

"Experimental Television Klystron With High Efficiency"

Elektron. tekhnika. Nauchno-tekhn. sb. Elektron. SVCh (Electronic Technology.
Scientific-Technical Collection. Microwave Electronics), 1970, No 7, pp 160-162
(from RZh--Elektronika i yeye primeneniye, No 11, November 1970, Abstract No 11A126)

Translation: The development is reported of an experimental klystron, the parameters of which were optimized for a specified current and voltage with the aid of an electronic computer. The electronic efficiency of the klystron produced amounts to 70 percent. With an amplification band of 1.3 percent and a shift of the maximum amplitude-frequency characteristic to the low-frequency side, the maximum efficiency (with respect to power in the load) exceeds 60 percent with an amplification factor of 40 db. Summary.

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1/2 023 UNCLASSIFIED PROCESSING DATE--09OCT70
TITLE--THERMODYNAMICS OF GASEOUS OXYGEN CONTAINING COMPOUNDS -U-
AUTHOR-(04)-BORISOV, M.I., KULAGIN, V.I., ANTONOV, A.A., MASLOV, P.G.
COUNTRY OF INFO--USSR **B**
SOURCE--ZH. FIZ. KHIM. 1970, 44(3), 826-7
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY, PHYSICS
TOPIC TAGS--THERMODYNAMICS, OXYGEN COMPOUNDS, THERMODYNAMIC PROPERTY
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1993/0295 STEP NO--UR/0076/70/044/003/0826/0827
CIRC ACCESSION NO--AP0113225
UNCLASSIFIED

2/2 023

CIRC ACCESSION NO--AP0113225

UNCLASSIFIED

PROCESSING DATE--09OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. FORMULAS ARE DERIVED FOR THE 1ST TIME WHICH CAN BE USED FOR THE CALC. OF THERMODYNAMIC PROPERTIES OF 10 GASEOUS COMPS.: HUX (X EQUAL D, T, A1, F), DOX (X EQUAL T, A1, F), TOX (X EQUAL AL, F), AND ALOF AS FUNCTION OF TEMP. AND PRESSURE. THEY ARE VALID AT 250-6000DEGREESK AND AT ANY PRESSURE AT WHICH A GIVEN GAS CAN BE CONSIDERED AS BEING IDEAL. THE ACCURACY IS 0.1-0.8PERCENT, AND 0.1-1.5PERCENT FOR C SUBPDEGREES. ALL VALUES ARE EXPRESSED IN CAL-MOLE-DEGREE. VALUES OF COEFFS. PRESENT IN THESE FORMULAS ARE TABULATED. FACILITY: LENINGRAD. GOS. PEDAGOG. INST. IM. GERTSENA, LENINGRAD, USSR.

UNCLASSIFIED

USSR .

UDC 681.32:31

ANILOV, V. M., ~~BORISOV, M. S.~~, VLASOV, F. S., YEREMIN, A. T., MONAKHOV, G. D.,
and RUMYANTSEV, V. I.

"Computer Complex"

USSR Authors' Certificate No 308430, Cl. G 06 f 15/16, filed 20 Apr 70,
published 12 Aug 71 (from RZh-Avtomatika, Telemekhanika i Vychislitel'naya
Tekhnika, No 5, May 72, Abstract No 5B98P)

Translation: Special-purpose computer complexes are known which contain a set of digital computers with interlinking units, with synchronization of synchron-series of machines and coupling lines between the digital computers of the complex, which assure correction of data errors occurring as a result of machine malfunctions. However, the amount of time and hardware redundancy used for increasing reliability and for organization of input data averagings in these complexes is considerable. In addition, parallel operation of the machines of the set is impossible in the event that it is necessary to raise the productivity of the computer complex by lowering its reliability. The unique feature of the proposed special-purpose complex is that the output data, address, and control lines of each section into which each computer of the complex is divided are assembled in each machine via assembly circuits into data, address, and control mainlines, which are connected to the inputs of the

1/2

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ANILOV, V. M., et al., USSR Authors' Certificate No 308430

intersectional coupling units of all machines of the set; the output data, address, and control lines of the intersectional coupling unit of each machine of the complex are connected to the data, address, and control inputs of the functional sections of the corresponding computer of the complex. Another unique feature of the special-purpose computer complex is the fact that the intersectional coupling unit of each machine of the complex contains "m" out of "n" (where $n > m$) majority circuits, majorizing inhibit gates, by-pass gates, assembly circuits, and a control register with a control signal generating circuit: the mainline of each machine of the complex being connected to the majority circuit input, through the majorizing inhibit gate to the first assembly input, and through the by-pass gate to the additional assembly input, the control inputs of the gates coupled by control lines to the corresponding outputs of the control circuit, which is connected to the control register output. This makes it possible to reduce the time and hardware redundancy for increasing reliability, provide averaging of input data, and organize parallel operation of the machines of the complex.

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- 24 -

USSR

UDC 621.378.329

BORISOV, N.A., DAWIDOV, A.A., LAVRUSHIN, B.M., KARMOV, YE.V.

"On The Effect Of Cavity Mechanical Treatment On The Parameters Of A Cadmium Sulphide Laser With Electron Excitation"

Kvantovaya elektronika (Quantum Electronics), Moscow, No 6(12), 1972, pp 113-115

Abstract: The paper studies the laser parameters of bulk single crystal of cadmium sulphide grown by the static sublimation method. The results obtained in the work show that to a considerable degree the low laser parameters realized heretofore with bulk crystals of CdS are caused by mechanical processing of the surface bombarded by electrons. In the case of excitation through the cleaved surface, the values obtained of the laser threshold of generation and efficiency are close to the best results obtained with photo crystals of CdS. 6 ref. Received by editors, 22 May 1972.

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- 76 -

USSR

UFO 621.578.305

BOGDANKEVICH, O.V., BORISOV, N.A., KALENDIN, V.V., KOVSH, I.B., KRYUKOVA, I.V.

"Kinetics Of Reproduction Of Luminescent Properties Of GaAs Single Crystals Irradiated By An Intense Beam Of Electrons"

Kvantovaya elektronika (Quantum Electronics), Moscow, No 9(11), 1972, pp 108-111

Abstract: In previous papers by the authors, studies of the principal characteristics of a GaS laser with pumping by a beam of electrons with an energy up to 1 Mev (i.e., above the threshold for formation of defects) showed that with a sufficiently prolonged operation of the laser in such a regime, a decrease of power was observed at approximately 50--50 percent. However, annealing of the crystals at room temperature over several hours leads to practically a complete reduction of it. In the present work new results are reported concerning improvement of the radiating power of GaAs after irradiation by intense electrons. Irradiation of the single crystal was conducted at 500° K with the following parameters of the electron beam: energy of electrons, 600 keV; current density in beam, 20--30 a/cm²; duration of current impulse, 15 nanoseconds; and recurrence frequency, 1--2 Hz. Before and after irradiation the spectra were studied of the photoluminescence of specimens in the 0.75--1.2 micron region at 78° as well as the change of the laser threshold of generation with excitation by electrons.

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BOGDANKEVICH, C.V., et al., Kvantovaya elektronika, Moscow, No 5(11), 1972, pp 108-111

and a 50 kev energy at 300° K. The specimens had the form of a rectangular parallelepiped: length of resonator 0.5--1 mm, thickness 0.2 mm, width 2--3 mm. The gallium arsenide was grown by the Czochralski method and doped with tellurium to a concentration of $5 \cdot 10^{17} \text{ cm}^{-3}$ as well as by the liquid epitaxy method (without doping) with a concentration of carriers of $1.2 \cdot 10^{17} \text{ cm}^{-3}$ and a mobility of 46,000 cm^2/sec at 78° K. (The total concentration of impurity in these specimens amounted to 10^{16} cm^{-3} .) An increase of photoluminescent intensity and a decrease of the laser threshold was observed in the n-GaAs:Te. These changes depend on the intensity and dose of irradiation and the parameters of the initial material. In the non-doped epitaxial specimen an improvement of the luminescent properties was not observed. A qualitative explanation is given of the observed effects. The authors thank C.N. Grigor'yev for measurement of the spectrum of x-ray reflection. 3 fig. 8 ref. Received by editors, 22 Feb 1972.

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UDC: 621.378.329

BOGDANKEVICH, O. V., BORISOV, N. A., LAVRUSHIN, B. M., LEBEDEV, V. V., NEGODOV, A. G., STREL'CHENKO, S. S.

"Waveguide Structure of the Cavity in a Semiconductor Laser With Electron-Beam Pumping"

Moscow, Kvantovaya Elektronika, Sbornik Statey, No 2(8), 1972, pp 61-68

Abstract: A method is described for creating a cavity with waveguide structure in a semiconductor laser with electron-beam pumping. It is shown that waveguide modes are stimulated in such a cavity, with the result that the emission threshold is independent of the energy of the electrons, and the radiation pattern has a structure which is more complex than in a uniform cavity. This type of cavity reduces the emission threshold to 0.3 A/cm^2 (in the 15-20 keV electron energy region), which is 1-2 orders of magnitude lower than in a cavity of homogeneous structure. Five illustrations, four tables, bibliography of nine titles.

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USSR

UDC 621.375.82

BOGDANKEVICH, O. V., BORISOV, N. A., LAVRUSHIN, B. M., LEBEDEV, V. V.,
NEGODOV, A. G., STREL'CHENKO, S. S.

"Waveguide Structure of a Resonator in a Semiconductor Laser With Electron
Beam Pumping"

V sb. Kvant. elektronika (Quantum Electronics -- Collection of Works),
No. 2, Moscow, "Sov. radio", 1972, pp 61-68 (from RZh-Fizika, No 10,
Oct 72, Abstract No 10D999)

Translation: A method is described for developing a waveguide structure of
a resonator in a semiconductor laser with electron beam pumping. It is
shown that modes of a waveguide type are excited in such a resonator, as a
result of which the oscillation threshold is independent of the electron
energy and the directional diagram has a more complex structure than in a
homogeneous resonator. Use of the resonator makes possible a reduction
in the oscillation threshold to 0.3 a/cm^2 (in the electron energy range of
15-20 kev), which is less than in a laser with a homogeneous resonator by a
factor of 1-2. 9 ref. Authors abstract.

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USSR

UDC:537.226+537.311.33]:539.16.04

DUDKO, G. V., CHEREDNICHENKO, D. I., BORISOV, N. A., KOLEGAYEV, M. A.

"Influence of Electron-Beam Heating on the Structure of Germanium"

Materialy. Vses. Soveshch. Po Defektam Struktury v Poluprovodn., 1969. Ch. 2 [Materials of All-Union Conference on Structural Defects in Semiconductors, 1969, Part 2 -- Collection of Works], Novosibirsk, 1970, pp. 104-110 (Translated from Referativnyy Zhurnal Fizika, No. 11, 1970, Abstract No. 11 Ye. 1076 by A. Shub)

Abstract: The mean density of dislocations N and conditions of their formation are determined on the basis of analysis of the heat field excited in a plate by surface electron-beam heating. Calculation performed for Ge gives a value of N of about $1 \cdot 10^7 \text{ cm}^{-2}$. The result produced agrees well with the experimentally determined value of N for n-type Ge, bombarded with a flat electron beam in the following mode: $U = 10 \text{ kv}$, $I = 35 \text{ ma}$. Dislocations are generated within the temperature range $0.6\text{-}0.75 \text{ m.p.}$ It is demonstrated that the defect structure in the irradiated zone is primarily a dislocation structure.

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- 31 -

USSR

UDC 539.376+532.135

BORISOV, N. K., SHATAYEV, R. G.

"Nonsteady Creep of Thin-Walled Structures of Variable Cross Section"

Tr. Kazan. aviats. in-ta (Works of Kazan' Aviation Institute), 1972, No. 145, pp 33-40 (from RZh-Mekhanika, No 3, Mar 73, Abstract No 3V526)

Translation: The problem of determining the stress-deformation state of thin-walled framed structures such as a wing and fuselage of an aircraft under non-steady creep conditions is discussed. It is proposed that the skin works only on the shift and the contour of the transverse cross sections does not change during deformation. The solution reduces to integration of a system of ordinary differential equations with variable coefficients in which the creep deformations are assigned to the load terms. A step method is applied to find the creep deformations. The system of differential equations is solved by a numerical method using the apparatus of integrating matrices. The proposed method is illustrated by numerical examples. 7 ref. Authors' abstract.

1/2 009 UNCLASSIFIED PROCESSING DATE--09OCT70
TITLE--REGENERATION OF MAGNESIUM BASE -U-
AUTHOR-(04)-ONI, L.A., Pilyugin, V.I., BORISOV, N.L., BELGUS, V.D.
COUNTRY OF INFO--USSR
SOURCE--BUM. PRGM. 1970, (3), 2-4
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--MAGNESIUM, CYCLONE FURNACE, SULFITE, SULFUR, SODA ASH
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1995/1359 STEP NO--UR/0329/70/000/003/0002/0004
CIRC ACCESSION NO--AP0116610
UNCLASSIFIED

2/2 009

UNCLASSIFIED

PROCESSING DATE--090670

CIRC ACCESSION NO--AP0116810

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. EXPTS. ON THE RECOVERY OF MG AND S FROM SPENT LIQUORS OF THE MG BASE SULFITE PROCESS WERE CONDUCTED IN AN EXPTL. CHAMBER FURNACE WITH AND WITHOUT A CYCLONE PRECOMBUSTION CHAMBER OF THE TYPE USED IN TYPICAL SODA RECOVERY BOILERS. THE EFFICIENCY OF THE FURNACE WHEN OPERATED UNDER VARIOUS CONDITIONS WAS EVALUATED BY DETN. OF THE INDEX OF S RECOVERY (THE RATIO OF S GASIFIED TO THE TOTAL S INTRODUCED WITH THE SPENT LIQUOR). WITHIN THE NORMAL RANGE OF VARIATIONS, EXCESS AIR HAD NO EFFECT ON THE COMBUSTION PROCESS. TWO MAIN FACTORS AFFECTING THE DEGREE OF S RECOVERY WERE THE TEMP. AND THE PRESENCE OF MINERAL COMPONENTS OTHER THAN MG COMPS., I.E. MAINLY NA AND K. AT 1100DEGREES OR ABOVE IN THE COMBUSTION CHAMBER AND 80PERCENT MGD IN THE ASH, THE DEGREE OF S RECOVERY CAN REACH 97PERCENT AT A NORMAL EXCESS OF AIR. THUS, THERE IS NO NEED FOR A REDUCING ZONE AND A 2 STAGE COMBUSTION CHAMBER. UNDER SUITABLE TEMP. CONDITIONS, MG BASE SPENT SULFITE LIQUORS CAN BE BURNED ON AN INDUSTRIAL SCALE IN FURNACES OF CONVENTIONAL SODA RECOVERY EQUIPMENT. THE SCREENING TUBES MUST BE HEATED TO GIVE 950-1000DEGREES AT THE OUTLET OF THE COMBUSTION CHAMBER AND 1250-1300DEGREES AT THE OUTLET OF THE SUPERHEATED ZONE. A CYCLONE PRECOMBUSTION CHAMBER IS NEEDED ONLY IF THE REQUIRED TEMP. CANNOT BE OBTAINED IN THE SUPERHEATED ZONE BECAUSE OF LOW CALORIFIC VALUE OF THE SPENT LIQUOR OR TOO LOW A TEMP. OF THE AIR FED INTO THE FURNACE. FACILITY: TSENT. NAUCH. ISSLED. PROEKT. KONSTR. KOTLOTURBIN. INST. IM. PULZUNOVA, LENINGRAD, USSR.

UNCLASSIFIED

USSR

UDC 547.752'83:543.422.4

SAGITULLIN, R. S., BORISOV, N. N., KOST, A. N., and SIMONOVA, N. A., Moscow State University imeni M. V. Lomonosov

"Indole Chemistry. XX. Reaction of 2-Aminoindoles With α - β -Unsaturated Ketones"

Riga, Khimiya Geterotsiklicheskikh Soyedineniy, No 1, Jan 71, pp 61-64

Abstract: α - β -Unsaturated ketones react with 1-alkyl-2-aminoindoles forming α -carboline: refluxing 1-methyl-2-aminoindole hydroiodide with benzalacetophenone in isopropyl alcohol and equivalent amount of a base yielded 82% of 9-methyl-2,4-diphenyl- α -carboline, m.p. 123-24°. Analogously 2-aminoindole condensed with dibenzoyl methane or benzal-acetophenone yields 2,4-diphenyl-pirimidino-[1,2]-indole, m.p. 222-224°. Finally, 1-methyl-2-aminoindole or 1-benzyl-2-aminoindole react with methylacetylacetone forming 2,3,4,9-tetramethyl- α -carboline, m.p. 150-152°, and 2,3,4-trimethyl-9-benzyl- α -carboline, m.p. 217-219° respectively.

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1/2 034
TITLE--MAN, SPACE, AND RADIATION -U- UNCLASSIFIED
PROCESSING DATE--04DEC70
AUTHOR--BORISOV, O.
COUNTRY OF INFO--USSR
SOURCE--SOVETSKAYA KIRGIZIYA, AUGUST 16, 1970, P 4, COLS 2-5
DATE PUBLISHED--16AUG70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--DOG, SPACE RADIATION, SPACE SIMULATION, SOLAR FLARE, MEDICAL
EXPERIMENT, SPACE MEDICINE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3008/1781 STEP NO--UR/9018/70/000/000/0004/0004
CIRC ACCESSION NO--AN0138734
UNCLASSIFIED

2/2 034

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AN0138734

ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. THE ARTICLE DESCRIBES AN EXPERIMENT CONDUCTED IN THE SOVIET UNION ON 200 DOGS SO AS TO DETERMINE THE EFFECT OF SPACE RADIATION. PROFESSOR YURIY GRIGOR'YEV WAS ONE OF THE PEOPLE WHO DIRECTED THE EXPERIMENT. THE DOGS WERE KEPT UNDER SIMULATED SPACE CONDITIONS WHICH MAY BE ENCOUNTERED DURING LONG SPACE VOYAGES. THE EXPERIMENT LASTED 3 YEARS. THE NOVEMBER, 1969, SOME DOGS WERE TAKEN OUT OF THE EXPERIMENT SO AS TO HAVE THE OPPORTUNITY TO CHECK THE DATA AGAINST THE LONG TERM IRRADIATION OF OTHER SPECIMENS. EACH DOG HAD ITS OWN DOSIMETER. ALSO, A MODEL WAS MADE WHICH IMITATE DOG'S TISSUES, AND DOSIMETERS INSTALLED IN THIS MODEL TO VERIFY THE UNIFORMITY OF IRRADIATION OF MODELLED ORGANS. A CONTINUOUS CLINICAL CONTROL WAS MAINTAINED DURING THE EXPERIMENT. ACCORDING TO GRIGOR'YEV, THE EXPERIMENT SHOWED THAT THE HAZARD OF GALACTIC RADIATION WAS TO SOME MEASURE EXAGGERATED. THE HYPOTHETICAL 100 REM RECEIVED BY AN ASTRONAUT DURING A ONE YEAR SPACE FLIGHT WOULD NOT HARM HIS HEALTH PROVIDED CERTAIN PRECAUTIONS HAVE BEEN TAKEN. IN THEORY, NO LONG RANGE HAZARDS EXIST EITHER. IN ADDITION, THE BIOLOGICAL EFFECT OF SIMULATED SOLAR FLARES WAS STUDIED. IN THIS CASE DOGS WERE SUBJECTED TO PROTON IRRADIATION WITH ENERGIES OF 50 TO 660 MILLION ELECTRON VOLTS. THIS EXPERIMENT SHOWED THAT THIS HAZARD WAS ALSO EXAGGERATED.

UNCLASSIFIED

BORISOV, O.M.

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673

X-4. ALLOYING: EPT
GLIM DISCHARGE: MOIDE

Article by O. M. Borikov, L. M. Sivertsov, H. J. Rabinov, E. I. Geydanova, A. D. Stokhina, Minsk, Moscow, N. F. Kuchenzov, T. Prokhorova, Rostov, S. S. Sinitsina, Polynovskiy, Krasnodar, L. I. Stetsko, 12-17 June 1972, p. 1377

An experimental study was made of the possibility of gas discharge at the electrode in the vicinity of the anode under the conditions between the electrode and the anode.

The variation in the alloying level by anode, groups V and II was investigated for transmission of H_2 and mixtures of the

In order to discover the mechanism of the formation of the alloy mixtures, the ion energies of H and Ar and the threshold energies of desorption of the electrodes made of Au-Sb and LaNi alloys were calculated. The calculations indicate the different mechanism of formation of alloy films on termination of H₂ and Ar through the discharge chamber and explain the observed experimental characteristics of alloy film.

USSR

UDC 621.355.8.035.2

BORISOV, P. A., and KLOSS, A. I.

"The Electrochemical Activity of Nickel in Hot Concentrated Solutions of NaOH"

Sb. rabot no khim. istachnikam toka. Vses. n.-n akkumulyator. in-t (Collection of Works on the Chemical Source of Current. All-Union Scientific Study Institute for Storage Batteries), Vyp 7, 1972, pp 112-118 (from Referativnyy Zhurnal -- Khimiya, No 8(II), 1973, Abstract No 8L232)

Translation: By plotting the galvanostatic curves of the change in the potential with time, by x-ray, and by chemical analysis, it was shown that the oxidation of the metal with the formation of Ni(OH)_2 is a single anode process for the nickel electrode in a 50% NaOH solution at temperatures of 90-130°. The process of the oxidation of nickel under these conditions is reversible and occurs at depths in the electrode. During multiple cycles of the anode and cathode polarization, the reversibility is preserved, thus the nickel electrode may be used in high temperature batteries. (Author's abstract).

1/1

- 11 -

USSR

UDC 621.643.901.5

BORISOV, P. P., SUCOVA, V. N., IVANOV, A. G., DAVYDOVA, L. N., and
RUSSIIAN, A. V., VNIImontazhspetsstroy [All-Union Scientific Research Insti-
tute for Installation and Specialized Construction Operations]; ANUCHKIN,
M. P., VNIIST [All-Union Scientific Research Institute for the Construction
of Trunk Pipelines]

"Increasing the Breaking Strength of 17G1S Steel by Treating It With Synthetic
Slags"

Moscow, Stroitel'stvo Truboprovodov, No 7, Jul 71, pp 26-28

Abstract: The article describes results of a study at VNIImontazhspetsstroy
on the ability of specimens of 17G1S steel, refined in a ladle with synthetic
slag, to resist the propagation of static and dynamic bending cracks in the
stressed state. For comparison, a study was also made of specimens of the
steel which had not been refined with synthetic slag. It was found that
treatment of 17G1S steel with synthetic slag in a ladle increases the crack
initiation and propagation energy under all testing conditions and hence the

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USSR

BORISOV, F. P., et al., Stroitel'stvo Truboprovodov, No 7, Jul 71, pp 26-28

total energy to fracture. The treated steel is characterized by high resistance to crack propagation in the stressed state at low temperatures. The operating reliability of gas pipelines can be increased by using treated 17G1S steel.

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- 87 -

USSR

UDC 681.327.66

B
BORISOV, P. V., TREGUBOV, K. YA., KRUPSKIY, A. A.

"A Device for Readout of a Multivalued Response in an Associative Memory"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraxtsy, Tovarnyye Naki, No 3, 1970, pp 48-49, patent No 259962, filed 18 Dec 68

Abstract: This Author's Certificate introduces a device for readout of a multivalued response in an associative memory. The device contains a control unit, detector matrix, boundary registers connected to the coordinate windings of the matrix, and address encoders connected to the outputs of the boundary registers. As a distinguishing feature, the device incorporates an answer display unit which increases speed. This display unit is made in the form of a coincidence circuit which indicates "negative response", "positive single-valued response" and "multivalued response". The input is connected to the encoder, and the output is connected to the control unit.

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B Miscellaneous

USSR

UDC: 547.7/8

LIPKIN, A. YE., PUTOKHIN, N. I., and BORISOV, S. I.

"Investigation of α,β -Unsaturated Ketones of the 2-Phenylthiophene Series"

Khimiya. Sb. nauchn. tr. Kuybyshevsk. politekhn. In-t (Chemistry. Collected Scientific Works of Kuybyshev Polytechnical Institute), 1969, pp 94-99, Kuybyshev (Translated from Referativnyy Zhurnal Khimiya, No 2, 25 Jan 70, Abstract No 2 Zh295)

Translation: Using a known method (Brown, A. S., Vorozhkov, M. G, Zhurnal Organicheskoy Khimii, 1947, Vol. 17, p. 1162), 2-R-5-R'-thiophene (I R = Ph, R' = H) (Ia) was produced. Acetylation of (Ia) with AcCl in the presence of SnCl₄ produces (I) (R = Ac, R' = Ph) (Ib). The action of Me₂NCHO (II) on (Ia) produces (I) (R = CHO, R' = Ph) (Ic). Reduction of (Ic) according to Kizhner leads to (I) (R = Me, R' = Ph) (Id). Oxidation of (Ic) with KMnO₄ produces (I) (R = COOH, R' = Ph) (Ie). Crotonic condensation of (Ib) with RCHO⁴ (III) and (Ic) with the corresponding ketones produced 1-(5'-phenylthienyl-2')-3-R-propene-2-ones-1 (IV) and 1-(5'-phenylthienyl-2')-3-(R)-propene-1-ones-3 (V). A mixture of 6.8 mmol (Ia) and 12 mmol AcCl in 20 ml absolute benzene is cooled with water, 0.01 mol SnCl₄ is added, after 30-40 minutes it is diluted with water (about 0°), the organic

1/3

USSR

LIPKIN, A. YE., et al, Referativnyy Zhurnal Khimiya, No 2, 25 Jan 70, Abstract No 2 Zh295

layer is washed with dilute HCl, a solution of NaOH, and water, the water layer is extracted with benzene, the combined organic solvent is evaporated, and 0.8 g (Ib) is produced from the residue, m.p. 116° (benzene). 17 mmol POCl₃ are added slowly to a mixture of 12.5 mmol (Ia) and 16.6 mmol (II) in 10 ml dry toluene, the mixture is heated 3.5 hours at about 100°, cooled, shaken with a hot saturated solution of AcONa, the organic layer is extracted with ether, washed with a solution of Na₂CO₃, the solvent is evaporated, and 0.9 g (Ic) C₁₁H₈O₂S, are produced, m.p. 76-8° (alcohol); semicarbazone, C₁₂H₁₁N₂O₂S, m.p. 225-7° (alcohol). A mixture of 1 mmol (Ic), 0.02 mol 98% hydrazine-hydrate and 3 ml diethylene glycol are boiled 7 hours, cooled, 9 mmol KOH are added, boiled 2 hours, 3.5 ml 10% HCl are added, extracted with benzene and 0.08 g (Id), C₁₁H₁₀S, are produced, m.p. 46-9°. 3.4 ml 4% KMnO₄ are added slowly at 4-8° to a suspension of 1.1 mmol (Ic) in 25 ml 1% NaOH, several drops of NaHSO₃ are added, the MnO₂ is filtered off, acidified with 10% HCl, and 0.07 g (Ie) C₁₁H₈O₂S, precipitates, m.p. 182° (alcohol). 0.5-0.8 ml 20% NaOH are slowly added to a solution of 1.9 mmol (Ib) and 1.9 mmol (III) in 10-40 ml alcohol, after about 12 hours the precipitate is filtered, washed with alcohol, water, and (IV) is produced [given are R, empiri-

2/3

- 111 -

USSR

LIPKIN, A. YE, et al, Referativnyy Zhurnal Khimii, No 2, 25 Jan 70, Abstract No 2 Zh295

cal formula, yield in %, m.p. in °C (alcohol): Ph, $C_{19}H_{14}OS$ (IVa), 59.7, 155-6; furyl-2, $C_{17}H_{12}O_2S$, 54, 156-8; thienyl-2, $C_{17}H_{12}OS_2$ (IVb), 52, 178-9; α -naphthyl, $C_{23}H_{16}OS$, 74.2, 144-5; m -NO₂C₆H₄ (IVc), $C_{19}H_{13}NO_3S$, 51, 178-80; p -NO₂C₆H₄ (IVd), $C_{19}H_{13}NO_3S$, 75.5, 157-8. Similarly from 2.1 mmol (Ic) and 2.1 mmol of the corresponding ketone, (V) is produced (given are R, empirical formula, yield in %, m.p. in °C): Ph, $C_{19}H_{14}OS$, 51, 110-2 (alcohol); (Ph)₂, $C_{25}H_{18}OS$ (Va), 80, 186-8 (benzeneacetone); thienyl-2, $C_{17}H_{12}OS$ (Vb), 79.5, 137-41 (acetone); 5-phenylthienyl-2, $C_{23}H_{16}OS_2$ (Vc), 62.5, 223-5 (benzene-acetone); β -naphthyl, $C_{23}H_{16}OS$, 58, 144-6 (alcohol); 5-(α -naphthyl)-thienyl-2, $C_{27}H_{18}OS_2$ (Vd), 77, 161-3 (benzene-acetone); 5-nitrothienyl-2, $C_{17}H_{11}NO_3S$, 9.2, 223-5 (alcohol-acetone); m -C₆H₄NO₂, $C_{19}H_{13}NO_3S$ (Ve), 47, 164-6 (alcohol-acetone); p -C₆H₄N(Me)₂, $C_{21}H_{19}NOS$, 74.2, 184-7 (alcohol); pyrrolyl-2, $C_{17}H_{13}NOS$ (Vf), 32, 240-2 (alcohol); 5-bromopyrrolyl-2, $C_{17}H_{11}BrOS_2$ (Vg), 62.8, 154-7 (alcohol); benzofuranyl-2, $C_{21}H_{14}O_2S$ (Vh), 54.5, 209-12 (alcohol-acetone); dibenzofuryl-4, $C_{25}H_{16}O_2S$ (Vi), 62.2, 174-6 (alcohol-acetone). Data of IR-spectra of (IVa-d) and (Vg-i) are presented.

N. Chupriyanova

1/2 020 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--DIORGANYLSILOXANE, ALPHA, OMEGA, DIOLS -U-
AUTHOR--(03)-VORONKOV, M.G., SVIRIDOVA, N.G., BORISOV, S.N.
COUNTRY OF INFO--USSR
SOURCE--U.S.S.R. 263,595
REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRATSY, TOVARNYE ZNAKI 1970,
DATE PUBLISHED--10FEB70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--ORGANOSILICON COMPOUND, SILOXANE, FLUORINATED ORGANIC
COMPOUND, CHEMICAL PATENT, ALCOHOL, CHEMICAL SYNTHESIS
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3006/1596 STEP NO--UR/0482/70/000/000/0000/0000
CIRC ACCESSION NO--AA0135237
UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AA0135237

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE TITLE COMPODS. ARE PREPD. BY
TREATING 1,3,DIACETOXYTETRAMETHYLDISILOXANE OR
ALPHA,OMEGA,DIACETOXYDIORGANYLSILOXANES CONTG. A CF SUB3 CH SUB2 CH SUB2
GROUP WITH H SUB2 O IN THE PRESENCE OF AN ACID ACCEPTOR, E.G. CACO SUB3,
NAOH.

UNCLASSIFIED

1/2 020 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--ANIONIC POLYMERIZATION OF METHYLPHENYLCYCLOSILOXANES -U-
AUTHOR-(04)-BORISOV, S.N., KURLOVA, Z.V., YUZHELEVSKIY, YU.A., CHERNYSHEV,
YE.A.
COUNTRY OF INFO--USSR
SOURCE--VYSOKOMOL. SOEDIN., SER. B 1970, 12(5), 332-4
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--POLYMERIZATION, SILOXANE, CYCLIC GROUP, BENZENE DERIVATIVE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3007/0725 STEP NO--UR/0460/70/012/005/0332/0334
CIRC ACCESSION NO--AP0136164
UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0136164

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE POLYMN. RATE OF THE TITLE MONOMERS (I) IN THE PRESENCE OF K POLY(DIMETHYLSILOXANE)DIOLATE DECREASED IN THE ORDER:
1,3,5,7,TETRAPHENYL,1,3,5,7,TETRAMETHYLCYCLOTETRASILOXANE SIMILAR TO
1,3,5,TRIPHENYL,1,3,5,7,7,PENTAMETHYLCYCLOTETRASILOXANE GREATER THAN
HEXAMETHYLDIPHENYLCYCLOTETRASILOXANE GREATER THAN
1,1,DIPHENYL,3,3,5,5,7,7,HEXAMETHYLCYCLOTETRASILOXANE GREATER THAN
HEPTAMETHYL(PHENYL)CYCLOTETRASILOXANE GREATER THAN
OCTAMETHYLCYCLOTETRASILOXANE. THE INCREASED POLYMN. RATE OF I WAS
ATTRIBUTED TO THE INDUCTIVE EFFECT OF PH GROUPS ADJACENT TO THE SI ATOM.
FACILITY: VSES. NAUCH.-ISSLED. INST. SIN. KAUCH. IM. LEBEDEVA,
LENINGRAD, USSR.

UNCLASSIFIED

1/2 030

UNCLASSIFIED

PROCESSING DATE--23OCT70

TITLE--EFFECT OF SOME SILOXANEDIOLS ON THE PROPERTIES OF RUBBER MIXTURES
AND VULCANIZATES FROM SILOXANE RUBBERS -U-

AUTHOR-(02)-FOMICHEVA, M.M., BORISOV, S.N.

COUNTRY OF INFO--USSR

SOURCE--KAUCH. REZINA 1970, 29(2), 3-5

DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--SILOXANE, ALCOHOL, SYNTHETIC RUBBER, FILLER, TENSILE STRENGTH,
ELONGATION, THERMAL AGING, VULCANIZATE/(U)SKTV SILOXANE RUBBER, (U)SKT
SILOXANE RUBBER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRA--1997/0446

STEP NO--UR/0138/70/029/002/0005/0003

CIRC ACCESSION NO--AP0119382

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UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0119382

ABSTRACT/EXTRACT--(U) GP-O- ABSTRACT. SILOXANE RUBBERS SKTV AND SKT WERE MIXED WITH 35 PARTS AEROSIL 2491, 1-2 PARTS PEROXIDES, AND MILLED IN THE PRESENCE OF LIQ. SILOXANEDIOLS (I) AND CRYST. TETRAMETHYLDISILOXANEDIOL (II) AT 25-75DEGREES. I CONTG. LESS THAN 9 SI ATOMS WERE THE MOST EFFECTIVE ANTICROSSLINKING AGENTS. THE ANTICROSSLINKING EFFECTIVENESS OF II DEPENDED ON ITS M.P., E.G. II M. 65-60DEGREES DID NOT CHANGE DURING A 6 MONTH PERIOD. SKTV AND AKT VULCANIZATES MODIFIED WITH I HAD SUPERIOR TENSILE STRENGTH AND RELATIVE ELONGATION, WHICH WERE ONLY SLIGHTLY AFFECTED BY THERMAL AGING AT 200-50DEGREES. FACILITY: VSES. NAUCH.-ISSLED. INST. SIN. KAUCH. IM. LEBEDEVA, LENINGRAD, USSR.

UNCLASSIFIED

USSR

UDC 548.31

POLYANSKAYA, T. M., BORISOV, S. V., BELOV, N. V., Institute of Inorganic Chemistry, Siberian Department, Academy of Sciences of the USSR

"The Key Role of Analysis of Intercation Distances in Oxygen Compounds With Heavy Cations (High Atomic Numbers)"

Moscow, Kristallografiya, Vol 18, No 6, Nov/Dec 73, pp 1141-1156

Abstract: This is a survey and critical analysis of experimental data on the intercationic distances E-E in the structures of oxygen compounds -- tungstates and molybdates -- with the participation of cations of groups I-V of the periodic table, as well as an analysis of distances E-R and R-R ($E=W^{6+}$, Mo^{6+} , and R represents rare-earth elements and Y) in a number of rare-earth compounds. The paper demonstrates the use of "tabular" intercationic distances for determining the anion part in structures with heavy and multiply charged cations.

1/1

Inorganic Compounds

USSR

UDC 548.736:546.791.4'16

ZADNEPROVSKIY, G. M., and BORISOV, S. V., Institute of Chemistry of the Far-Eastern Scientific Center, Academy of Sciences USSR, Vladivostok, Institute of Inorganic Chemistry, Siberian Branch, Academy of Ac., USSR, Novosibirsk

"Crystalline Structure of $UF_4 \cdot 2.5 H_2O$ "

Moscow, Zhurnal Strukturnoy Khimii, Vol 12, No 5, Sep-Oct 71, pp 831-839

Abstract: The crystal structure of $UF_4 \cdot 2.5 H_2O$ was determined from 44 single reflexes of a powder roentgenograph (diffractometer DRON-1, $\lambda CuK\alpha$) using NMR data to identify the F^- and O^{2-} anions. The positions of U_1F and O atoms in the rhombic (Pnam) elementary nucleus, in which $a = 12.7568$ (3), $b = 11.140$ (3), $c = 7.060$ (9) Å, and $Z = 8$ were refined to $R = 0.150$. U-nonahedra -- tetragonal antiprisms with centralized base -- form polyhedra along the band with ruffles and apexes between them; between the individual bands only apexes are formed. In a tridimensional skeleton of bands channels occur along the $[001]$ filled with water molecules. U_2 is surrounded with 9F located at a distance of 2.39 Å, and U_1 -- with 5F at a distance of 2.29 Å

1/2

USSR

ZADNEPROVSKIY, G. M., and BORISOV, S. V., Zhurnal Strukturnoy Khimii, Vol 12, No 5, Sep-Oct 71, pp 831-839

and 4 0 at 2.63-2,34 Å. Possible directions of hydrogen bonds are discussed. The structure agrees with NMR and IR spectroscopical data.

2/2

- 8 -

Acc. Nr.

AP0048471

Abstracting Service:
CHEMICAL ABST. 5/70

Ref. Code
480070

B

104886w Crystalline structure of $\text{Pr}_2\text{W}_2\text{O}_9$. Borisov, S. V.; Kleytsova, R. F. (Inst. Neorg. Khim., Novosibirsk, USSR). *Kristallografiya* 1970, 15(1), 38-42 (Russ). $\text{Pr}_2\text{W}_2\text{O}_9$ crystallizes in the $P2_1/c$ space group with unit-cell dimensions a 7.70, b 9.84, and c 9.27 Å, β 106.5°, and $Z = 4$. Both W atoms have a distorted octahedron coordination with a W-O distance of 1.73-2.23 Å. The octahedrons are connected by the W-W edge of 3.293 Å and form a zig-zag chain of the formula $[(\text{W}_2\text{O}_9)^{6-}]_\infty$. The Pr atoms have a coordination no. of 8 and 9. The structure is characterized by short W-Pr distances. D. B. Ocenaskova

1/1

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Exobiology

USSR

BORISOV, T., Engineer, Scientific Reviewer of Trud

"The Microcosm and the Cosmos"

Moscow, Trud, 8 Feb 72, p 3

Translation: Usually, when we talk about life, we have in mind the manifestation of life to which we have become accustomed on earth. However, in a broad sense life is a very complicated concept. It is possible that somewhere in the cosmos it has developed in forms which we are still unable to imagine. On other planets the chemical and biological nature of life can be totally unlike that on earth. However, when embarking on the search for life in the solar system, scientists will primarily search for life as we know it. It is characterized by the constant growth, renewal, reproduction, and development of protein bodies. We will also look for such life on Mars. But is it possible there? Can some representatives of the infinitely diverse flora and fauna on earth live under Martian conditions?

With regard to the major representatives of the plant and animal kingdom scientists answer this question negatively. However, the protists and protophytes showed phenomenal adaptability to the sharply changing conditions of the environment.

1/6

USSR

BORISOV, T., Trud, 8 Feb 72, p 3

The survival rate of microorganisms under conditions approximating Martian conditions has been studied under the guidance of Professor L. K. Lozin-Lozinskiy in the laboratory of space biology at the Institute of Cytology, Academy of Sciences USSR, for a number of years.

In a number of cases the microorganisms isolated from the soil of Pamir, the Karakum desert, and Dixon Island displayed strong resistance to living conditions in the "artificial Mars" chamber. The oligonitrophilic Mycococcus endured them best of all. It reproduced itself rapidly, and on the 14th day of the experiment the number of its cells increased 7.6 times and more.

The microorganisms isolated from the soil of Antarctica developed even better. During the experiment they managed to reproduce themselves 10 to 100 times.

Descriptions of experiments on growing microorganisms and algae under conditions simulating the atmosphere of Jupiter can also be found in the press. As is well known, it consists basically of methane. A number of bacteria and algae survived even in such an environment.

Here is another example of the remarkable adaptability of microorganisms to space conditions. As is well known, the American Surveyor-3 automated

2/6

- 4 -